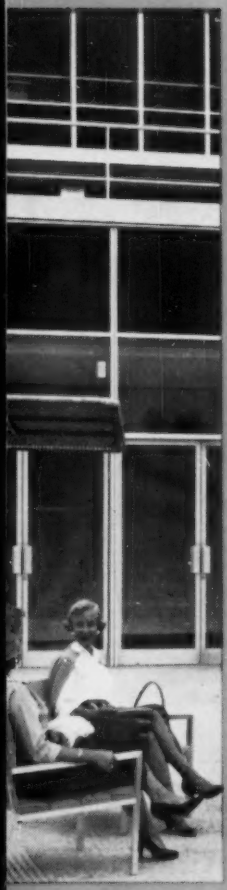
November 1958

The Office

Magazine of Management · Equipment · Methods



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ELECTRIC TYPEWRITER COMPARISON CHART

	SMITH-CORONA	Brand A	Brand B	Brand C	Brand B
AUTOMATIC MARGINS Simple one-hand, one-step operation.	YES	NO	NO	YES	NO
SIGNAL LIGHT Positive visual indication if motor is ON or OFF.	YES	NO	NO	NO	NO
TOTAL TABULATOR CLEAR Clears all stops instantly without moving carriage.	YES	NO	NO	NO	NO
ERROR CONTROL Simplifies correction of errors and line justification.	YES	NO	NO	NO	NO
BOTTOM MARGIN INDICATOR Page Gage accurately indicates bottom margin.	YES	NO	NO	YES	NO
88 CHARACTER KEYBOARD Standard at no extra charge.	YES	NO	YES	NO	YES
KEYBOARD SLOPE Key top slanted to fit natural movements of fingers.	YES	NO	NO	NO	NO
ROLL-FREE ACTION Releases typebar cams with no "scuffing" action.	YES	NO	YES	NO	NO
SAFETY COVER Motor shuts off when cover is raised to change ribbon.	YES	NO	NO	YES	YES
CUSHIONED TOUCH Eliminates jar to sensitive finger tips at end of each stroke.	YES	NO	NO	NO	NO
THE WORLD'S FASTEST ELECTRIC TYPEWRITER	YES	NO	NO	NO	NO

DECIDE FOR YOURSELF!

Before you buy, compare Smith-Corona with any other electric typewriter made!

Feature for feature, point for point, *compare* the Smith-Corona with any other electric typewriter on the market. You'll see why the Smith-Corona is not just equal, but *superior* to every other brand! Before you buy an electric typewriter, call your nearest Smith-Corona representative, and have him demonstrate the many exclusive features that make the Smith-Corona today's *soundest* electric typewriter investment!

Smith-Corona Electric

For More Information Circle No. 250

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ITALIC, MODE-MAKER, GENERALAIRE, 1600 LINE DESKS
GOODFORM CHAIRS • SUPER-FILER • SHELVING • PARTITIONS

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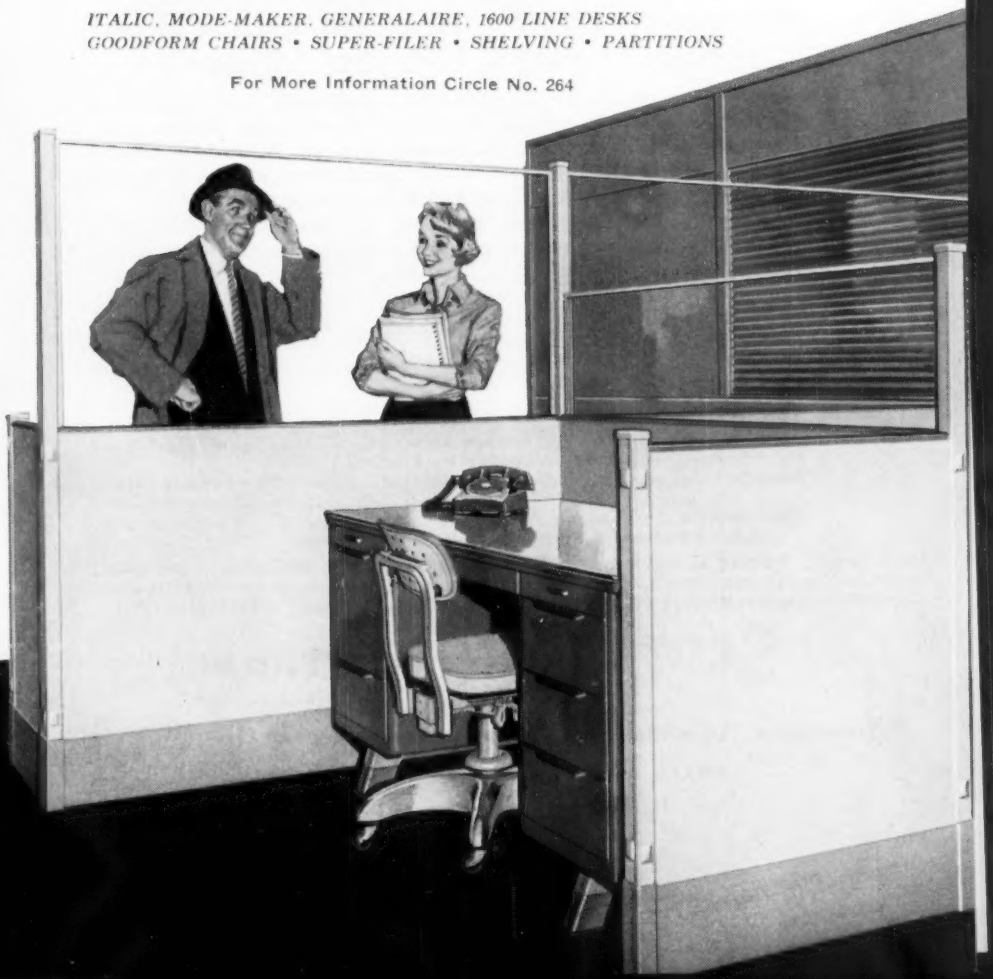

New "SCOTCH" BRAND

SANDWICH TAPES

for computers

Recommended specifically for digital recording and most AM, FM and PDM applications

eliminate ruboff and head build-up, reduce head wear, last longer

Here's the solution to the problem of excessive wear and ruboff —"SCOTCH" BRAND Sandwich Instrumentation Tapes. These tapes have a thin layer of plastic over the magnetic coating. This layer protects the iron oxide to produce a smooth, low-frictional head-to-tape operation that eliminates ruboff, head buildup and connected problems.

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#189—Standard output level with 50% more recording time. 1.0 mil polyester base, 0.35 mil magnetic coating, 50 micro-inch protective layer.

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MINNESOTA MINING AND MANUFACTURING COMPANY

. . . WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

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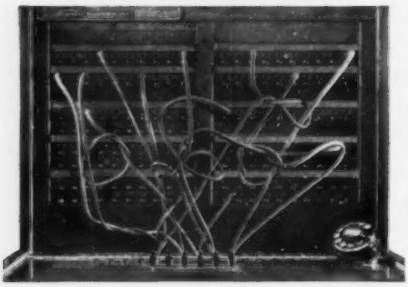
YOUR COMMUNICATION PROBLEM IS INTERNAL!



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St. Charles, Illinois

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William R. Schulhof, *Editor*

James Gorman, *Managing Editor*

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213-11

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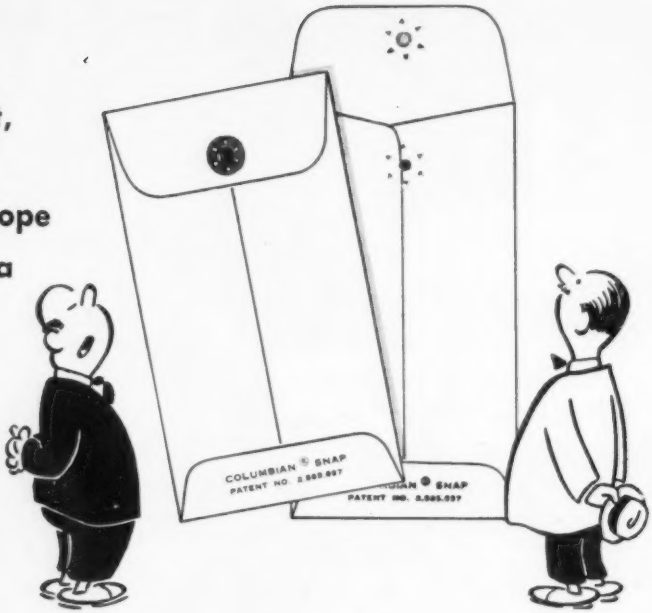
Kodak TRADEMARK

For More Information Circle No. 297

"That's right, George— it's an envelope made with a snap fastener."



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O-8

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For More Information Circle No. 245

The Office PRODUCT INDEX

This index, prepared for your convenience, lists the products and services advertised in this issue. Refer to pages listed for information on each. Further details can be had by writing manufacturer direct, or by use of reader inquiry card.

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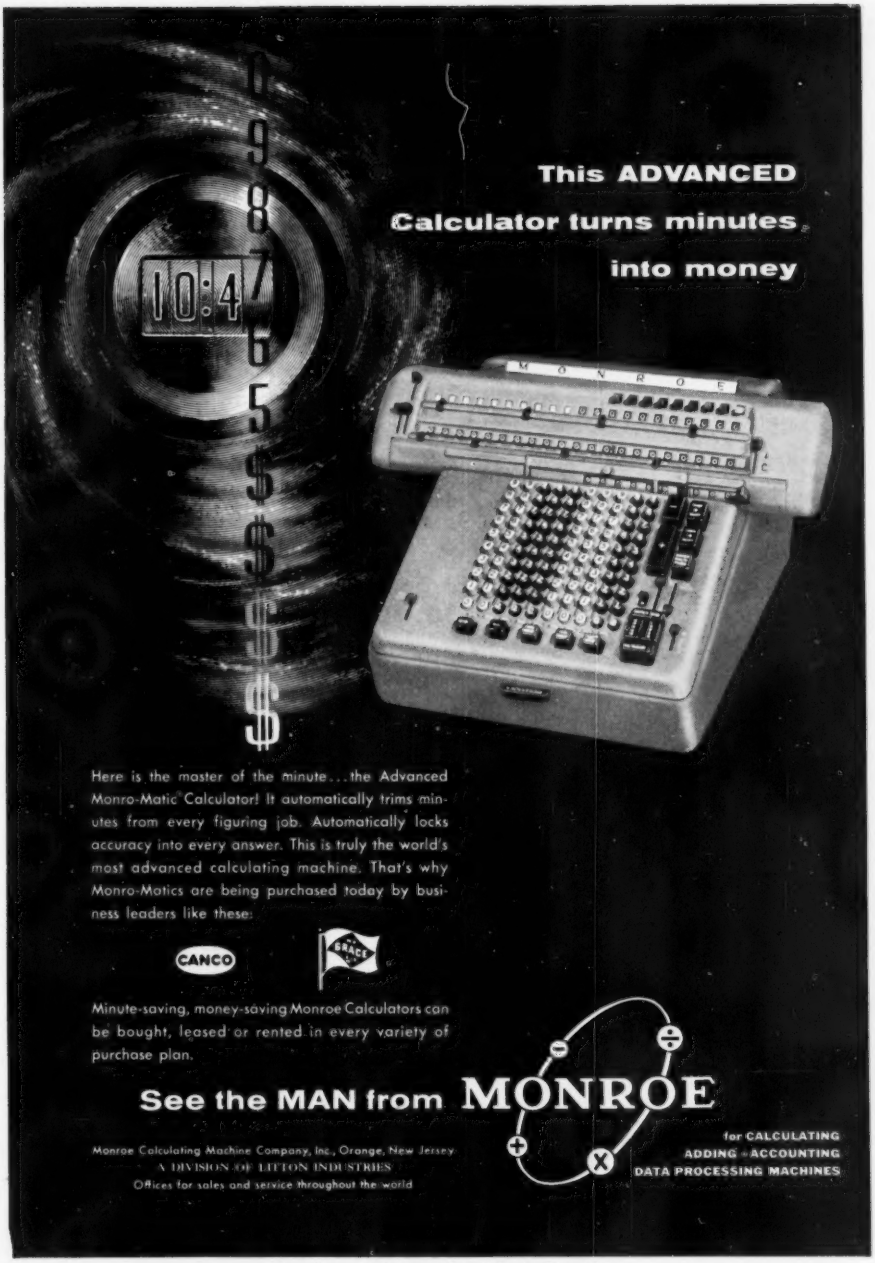

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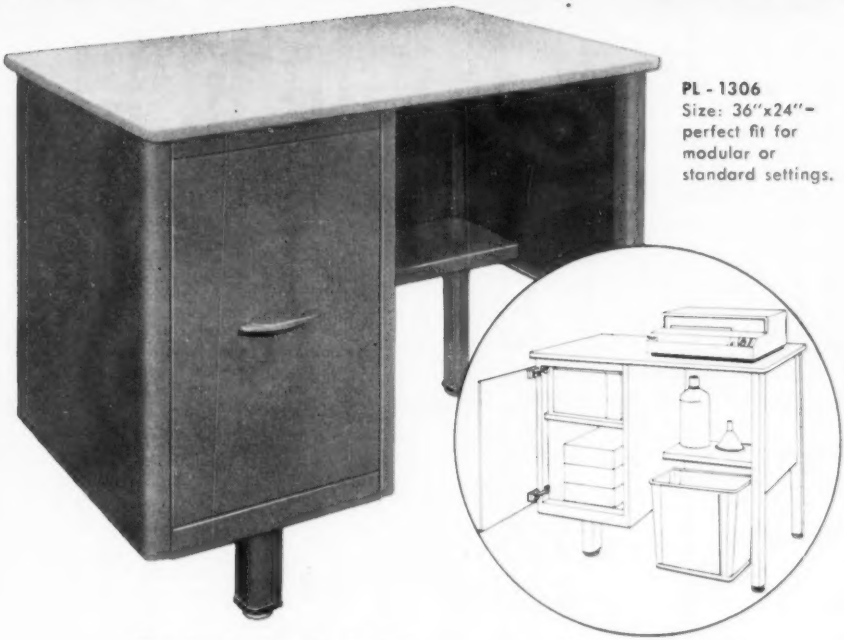
PHOTOCOPY DESK



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For More Information Circle No. 208

RATING OF PRACTICE DICTATION

INSTRUCTIONS: Score the dictator's performance in each area, A through F. In areas where improvement is necessary, check the factor(s) to be improved.

A. Readiness to Dictate **Score**———

———1. Did he have all necessary materials at hand?

———2. Did he make sure the stenographer or machine was ready?

B. Instructions at Start **Score**———

———1. Kind of communication.

———2. Number and distribution of copies.

———3. Names and addresses.

———4. Priority.

———5. Special instructions.

———6. ———

C. Physical Mannerisms **Score**———

———1. Did he enunciate clearly?

———2. Did he dictate at an even speed?

———3. Did he avoid nervous actions?

———4. Did he minimize distracting movements?

———5. Did he avoid fumbling?

D. Voice During Dictation **Score**———

———1. Did he maintain a normal pitch?

———2. Were his inflections normal?

———3. Did he mumble?

Dictator:———

E. Instructions During Dictation **Score**———

———1. Did he explain corrections?

———2. Did he indicate unusual punctuation?

———3. Did he indicate paragraphs?

———4. Did he explain underlining?

———5. Did he spell unusual words or proper names?

———6. Did he indicate quotes, capitalization, etc.?

F. Flow of Delivery **Score**———

———1. Did he dictate in complete thoughts, a phrase or a sentence at a time?

———2. Did he seem to be groping for words or editing and polishing as he went along?

———3. Were there any unnecessarily long pauses?

———4. Did he express himself in a way that seemed natural to him?

———5. Was he direct, active and specific with his phrasing?

———6. Do you think his style of expression fitted his purpose?

———7. Were his points relevant?

———8. Were his points developed in the best order to fit the purpose?

COMMENTS:

A Training Program for Personnel Who Dictate

H. M. OVERLEY, Personnel Supervisor,
Office & Foreign Personnel Div., Atlantic Refining Co., Philadelphia

DICTATION is taken much for granted in most offices. Public and private school teachers teach their students the basic stenographic skills. Many companies have developed training courses in secretarial and office practices. Yet most businessmen have no training in effective dictation; they learn only by trial and error. Consequently, few businessmen do a competent job of dictating.

If you ask your secretary how you rate as a dictator, the chances are she thinks you are "about average." Secretaries take it for granted that bosses are poor dictators; it is part of the game. Here are a few of the types that they have learned to get along with:

The Fumbler. The nervous type. He shuffles papers, doodles, bends paper clips, talks with his hands in front of his mouth.

The Mumbler. The lazy type. He drops word endings, slurs words, seldom enunciates clearly.

The Monotone. He talks with little or no inflection. He is probably critical of his secretary's poor punctuation.

The Smoker. Cigar chewers are the worst of this classification. Few men can smoke and talk clearly at the same time. Another unpopular fellow is the one who lets the smoke from the butt in his ashtray drift her way.

The Pacer. This type can't think sitting down. Not an especially fast think-

Ernest O. Lange Jr., Atlantic Refining's senior training assistant, leading a discussion group. Seated are: George Murray, Horace A. Smith, Sheldon B. Lee, Robert Royce, Mary H. Whitten and Robert A. Fuller.

er while on his feet either.

Pedantic Pete. This one likes long words, long sentences, long paragraphs and long-winded communications. He is apt to say: "Read that back to me, please," and then start again.

The Tortoise-Hare. He shifts from low to high and back again without warning. Prone to long pauses while he connects his scattered thoughts. He may become extremely agitated if his secretary files her nails while he is woolgathering.

You may not be exactly any one of these types. Most of us are a combination of several of them. In many instances, bad transcription is the fault of bad dictation, whether given to a stenographer or to a dictating machine. Faulty dictation is especially wasteful if machines are used.

HOW TO DICTATE

Decide what points you want to cover.
Make a mental or written outline.

Insure readiness to dictate.
Have all the reference material you need.

Clarify instructions.
Explain form, number of copies, corrections.
Give unusual spelling or punctuation and indicate paragraphs.

Think before you speak.
Organize your ideas. Avoid "one-word-at-a-time" delivery.

Avoid distracting mannerisms.
Don't let nervous actions, eating or smoking interfere with clarity.

Talk clearly.
Use normal inflection; enunciate clearly.

Express yourself naturally.
Be yourself---use familiar words---be direct.

The Atlantic Refining Company

Pocket card distributed to dictators during the training program.

If you spend a substantial portion of your time dictating, and most of us do, improving your dictation habits may result in significant savings. You will save on stationery and on transcription time. The most important saving, however, will be in your own time—time that can be devoted to more important activities.

You may find an amazing amount of reports and correspondence being done in longhand draft. Often these drafts are given to a qualified stenographer to copy type. After changes or corrections are made, they are typed again, and sometimes again.

Our training division has developed a program for training supervisors how to dictate. We devote five two-hour sessions to this program. The first session begins, after the usual introductory remarks, with a demonstration of dictation to a stenographer and of machine dictation. The person playing the role of dictator commits all the dictating sins in the book, but he does it as unobtrusively as possible. These demonstrations lead to some lively discussions and some genuine self-analysis. Using the discussion-leadership type of meeting, a set of basic principles of good dictation techniques is developed.

The material is not particularly new or startling. Indeed, a skilled conference leader can readily develop the course without a script or prepared answers. A typical outline is opposite.

All of the topics can be developed in a single two-hour session. Subsequent

A TRAINING PROGRAM OUTLINE FOR DICTATORS

I. Why dictate?

A. Savings:
1. Time.
2. Money.
3. Effort.

B. More exact transcription.

C. More creative work.

II. Why not dictate more?

A. Habit.

B. Fear.

C. Lack of knowledge and skill.

D. Lack of positive attitude.

III. Preparation.

A. Purpose of communication.

B. Organization of content:
1. Mental outline.
2. Written outline.
   a. Usually unnecessary—brief notes.
   b. Complex material—keep brief.

C. Readiness to dictate:
1. Related files and materials at hand.
2. Machine or stenographer ready.

IV. Giving clear instructions.

A. Before dictation:
1. Kind of communication:
   a. Draft.
   b. Inside correspondence.
   c. Outside correspondence.
2. Letterhead or paper to be used (if unusual).
3. Name and address.
4. Number and distribution of copies.
5. Unusual spacing or arrangement.
6. Special directions.
7. Priority or time needed.

B. During dictation:
1. Corrections.
2. Underlining and quotes.
3. Paragraphs.
4. Proper names and unusual words.
5. Outlining.
6. Special layout.
7. Related correspondence or files.

C. After dictation:
1. Release by dictator or stenographer.
2. "Thank you."

V. Delivery.

A. Voice:
1. Enunciation.
2. Normal pitch and tone.
3. Proper inflection.

B. Physical distractions:
1. Pacing.
2. Looking away (out window, etc.).
3. Fumbling.
4. Smoking, eating, hand over mouth.
5. Miscellaneous nervous habits.

C. Flow:
1. Maintaining an even rate of speed.
2. Expressing complete thoughts—a phrase or a sentence at a time.
3. Using your natural expression:
   a. Be yourself—dictate the way you talk.
   b. Use familiar words.
   c. Watch sentence length.
   d. Be direct.
   e. Use active verbs.
   f. Phrase specifically.
4. Avoiding unnecessarily long pauses.
5. Selecting style of expression suitable for the purpose.
6. Avoiding irrelevant points.
7. Developing points in proper order.
8. Editing and polishing.

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For More Information Circle No. 214

William A. Sooy, foreign personnel assistant at Atlantic Refining Co., dictating to stenographer Anne Hart.

sessions are devoted to actual practice. The members of the group take turns dictating to both machines and stenographers. While one member is dictating, the others observe and complete a rating sheet (page 12). Criticism and discussion follow each demonstration.

At the end of the first session, the members of the group are asked to come to the next meeting prepared to dictate a letter on a subject related to their usual duties.

At the end of the second session, a case history is distributed to each person. They are told that they will be asked to dictate on some phase of the case, but no specific assignments are made until the beginning of the third session. During the fourth and fifth sessions, dictation assignments are distributed with no opportunity for previous preparation.

A tape recorder can be used very effectively, especially in the first session, to dramatically demonstrate the need for improvement. We make no attempt to calculate and record the speed of dictation or to rate improvement in dicta-

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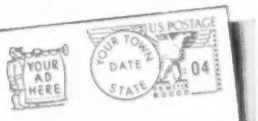

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For More Information Circle No. 364

tion speed at succeeding sessions. Improvement will be noted not only in speed of dictation, but also in clarity, readability and ease of transcription. Most important will be the change in attitude of the participants. As their knowledge and skill increases and self-confidence grows, some may even learn to like to dictate.

Keep in mind that the program is not intended as a course in composition. It is not a how-to-write course, but a how-to-dictate course. Like most training programs, it must be followed up to determine areas for further improvement. We tell the participants that we will check with their secretaries to obtain ratings on their improvement as dictators in the areas in which we have been practicing. These ratings become the basis for further individual coaching.

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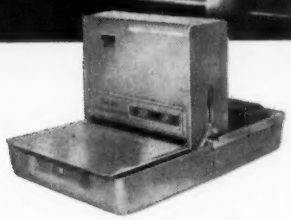

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For More Information Circle No. 227

The Retirement Party

HOWARD B. GRIFFITH, Suggestion Plan Director, Department of Water & Power, Los Angeles

IN THESE DAYS of logistics, statistics and research, nothing seems immune to a penetrating study of motivation, action and reaction. The principal problem is to discover a function or action which has not previously been subjected to the mercy of the avid examiner. But Parkinson missed one—the office retirement party.

Retirement parties present a knotty problem to management: they're bothersome but harmless, they waste time, they're stupid but you can't really get rid of them. Further, you can't control who attends them. Therein lies our study. Who actually does attend them?

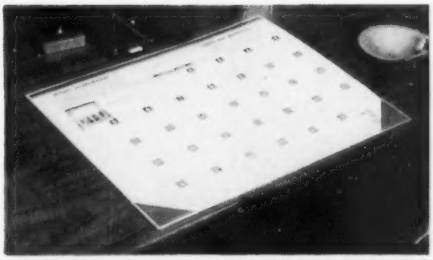
The sampling process in this study proved to be simple. After attending only four retirement parties, the results showed a correlation so perfect that the attendance at any forthcoming office retirement party can be predicted within 5% accuracy by using the following formula:

A (Attendance) = T1 (Type I) plus T2 (Type II) plus T3 (Type III) plus f (friends), where $T1 = \frac{f}{2}$, $T2 = \frac{f}{3}$, and $T3 = \frac{f}{6}$.

This is, of course, assuming the numerical value of f is known.

TYPE I. FREELOADERS. These will

Your desk top personal secretary



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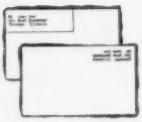

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comprise one-quarter of the entire attendance. Type I is 90% female (average age, 55) and, by its force of numbers alone, this group can be counted upon to surprisingly impress the spouse and the boss with the number (if not quality) of friends the retiree has. This group times its arrival, appearing just as the speeches end. During this period of general confusion, they restore partial order by forming a line at the refreshment table. With years of experience, they feel no qualms because they are not acquainted with the guest of honor, and thus ignore the handshaking line. Many members of this group are on a diet, and the party provides an excellent excuse to wash down two or three helpings of cake with a few cupfuls of coffee.

TYPE II. PARTYHOPPERS. This is a slightly younger and more energetic group of the tablehopper set. They will faithfully log the number of retirement parties being given on the last day of the month, together with the hour, and go to all of them, if humanly possible. Motivating a member of this group is (1) a desire to secure gossip material; (2) the fear of missing something; and (3) the desire to utilize working time to the greatest advantage. They are avid coffee-breakers, shoppers, errand seekers and hypochondriacs. If time permits, he or she (this group is 70% female) will listen to the retirement speeches and provide enthusiastic applause. Unlike Type I, the group is not primarily concerned with free refreshments although they will not hesitate to sample the coffee, cake and nuts, if only for purposes of comparison. The number of such affairs attended pro-

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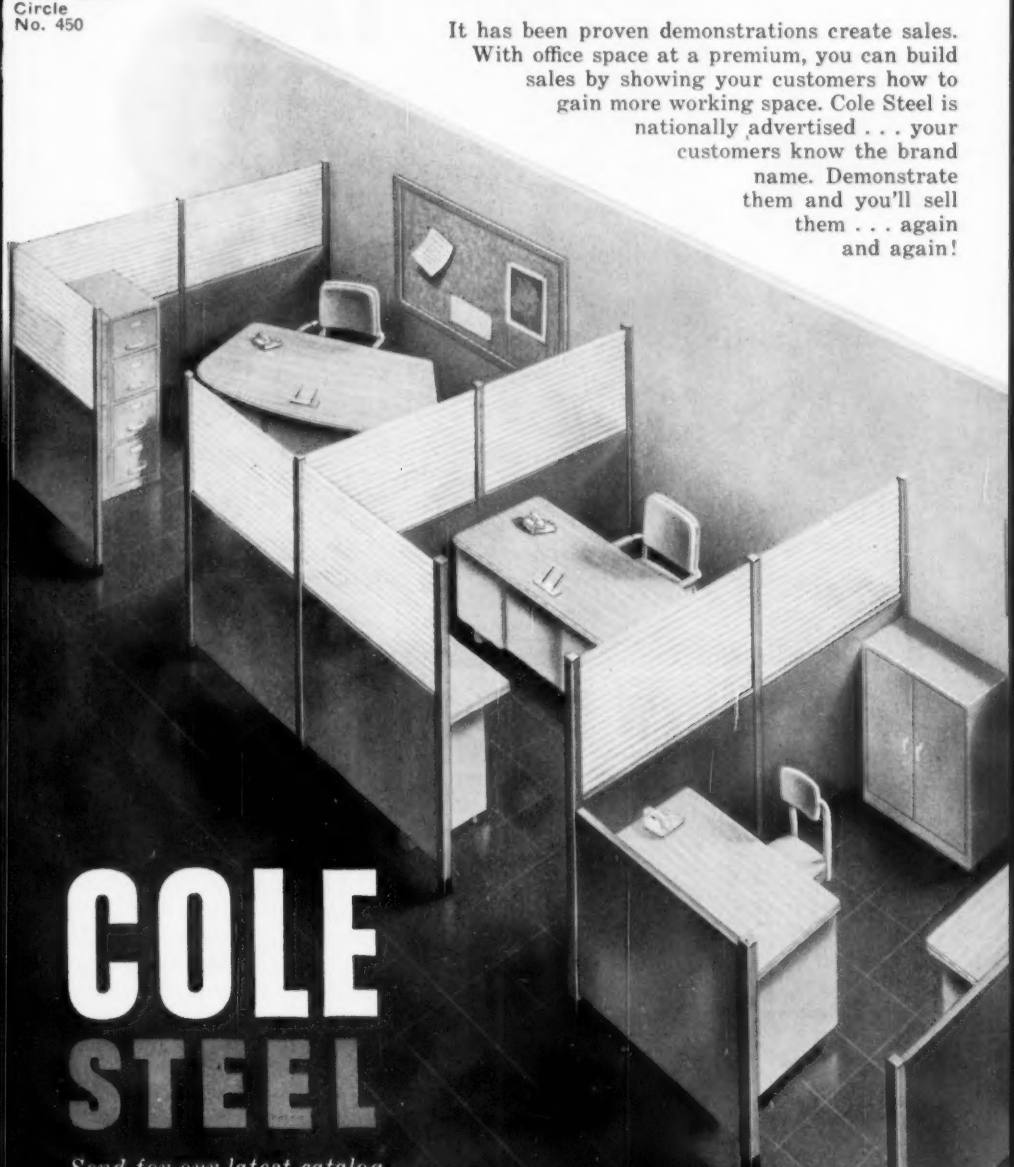

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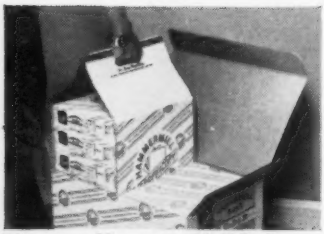

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systems IDEA

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SOLUTION: *Baltimore Business Forms' Continuous Handytab Forms, plus imagination*

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For More Information Circle No. 455

vides talking material for days to come.

TYPE III. LIMELIGHTERS. A smaller but more noticeable group, these are members of middle management, or are aspiring to same. Their attendance is sporadic, depending upon the importance of the event and, at first, it was believed that such irregular appearances would necessitate a more complicated attendance formula. However, it was found that the proportionate numerical attendance of this group remained uniform, although the composition of the group varied considerably. There is also a standard deviation of sex: at women's retirement parties, the group is mostly female; at the party of a first-level supervisor, it is about fifty-fifty; at an executive's retirement, males are predominant. A member of this group is not a friend of the retiree, although he may have a nodding acquaintance. Easily recognized, they may be seen vigorously shaking hands with everyone but the retiree. At one of the parties surveyed, a member of this group was so overzealously shaking hands that he unwittingly shook hands with his own wife.

They have two aims: (1) to be able to rub shoulders with the higher-ups, and (2) to be in the photograph which will appear in the next issue of the house organ. The best friend of this group is the photographer who usually urges, "Come on, folks, we need a few more people in the picture." With alacrity, a member of this group will stand alongside the department head, division head, or any other convenient executive. It all ends up with the retiree, examining his framed picture of the

(Continued on page 148)

New

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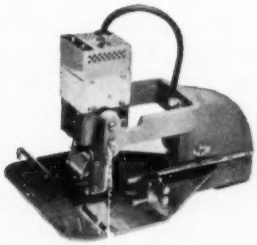

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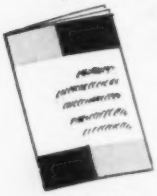

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Machines Speed Production for Large Chicago Mailers

TYING MAIL with twine, always a big part of a mailing operation, may assume such proportions in the higher production houses that frequently the whole operation must be designed to facilitate this operation. At All State Mailers, Chicago, during the peak fall season production is at the rate of more than 20 tons per day. Not only are production lines laid out to speed the tying operation, they also are designed to facilitate storage.

All State handles a variety of work ranging from small letter jobs to multi-million catalog mailings. The company is equipped to handle packaging such as boxed Christmas card mailings, self-mailers, personalized items and premiums. All State was founded in 1944 and occupies a building with more than 12,000 sq. ft. of work area. Equipment includes two Phillipsburg inserting machines, five Graphotypes, an automatic Hanke Speedway mailing machine, sorting racks and labeling machines. Two conveyor belts bring material to five package tying machines, products of B. H. Bunn Co., Chicago. The Bunn machines tie more than 25 millions pieces a year. The company employs more than 100 persons in the fall and about 30 the rest of the year.

"As All State grew," C. P. Rigney, its president, said, "our realization of

Light catalogs and circulars are conveyed to a Bunn tying machine, tied and sacked, at the rate of 18,000 an hour at All State Mailers, Chicago.

the importance of the tying operation grew too. When we set up our present operation, we were determined that this part of the work would be facilitated for as smooth an operation as possible. We stationed our five Bunn machines at strategic locations throughout the area and have found that the tying work is kept to an absolute minimum through a reduction in handling. The efficiency and reliability of the machines themselves have removed much

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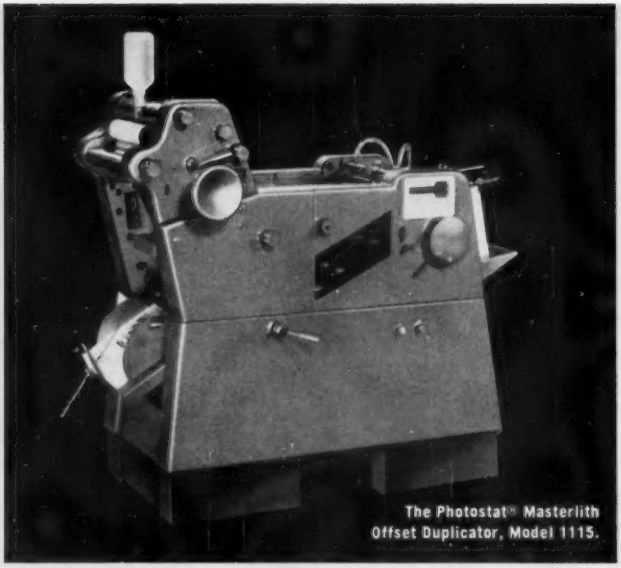
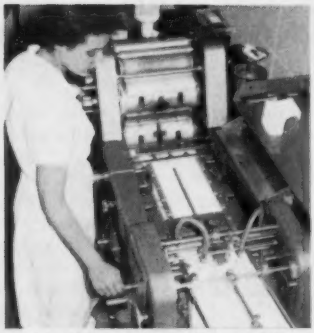


The Photostat® Masterlith Offset Duplicator, Model 1115.

How the Masterlith saves time and money for IMT



On the job, the Photostat® Masterlith Offset Duplicator offers quality reproduction, remarkable versatility, unmatched ease of operation.

The self-contained printing department at IMT makes its own plates... on a Photostat® Masterlite Combination Arc-Light Vacuum Frame.

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About a year ago the IOWA MUTUAL TORNADO INSURANCE ASSOCIATION of Des Moines decided to set up its own offset duplicating department.

As its name implies, IMT was established by a group of County Mutual Fire and Lightning Associations to share the risk of catastrophic windstorm in Iowa. Looking forward to its 75th anniversary in 1959, this thriving association now also offers comprehensive personal liability coverage for both town and farm property.

IMT uses a growing volume of printed materials: about 100 specific forms, plus sales promotion materials, letters and cards, on a variety of stock weights with sizes ranging from 3 x 3 to 8½ x 14 inches.

After thorough investigation • IMT chose the Photostat® Masterlith Offset Duplicator as the nucleus of the department, which began producing in March. During the first six months the department produced more than 300 printing jobs—ranging in quantity from 50 to 100,000 pieces.

Important savings • Accurate cost records show that dollar savings range from 25 to 50%. And, though they can't be measured statistically, savings in time are even more important—for they mean better service and good will.

A self-sufficient operation • The new department has practically complete facilities: paper cutter, jogger and padding press; equipment for making negatives; Photostat storage cabinets, and a Photostat Masterlite Combination Arc-Light Vacuum Frame for platemaking.

Masterlith makes it easy • The operator, who had no previous experience in offset printing, was trained (without charge) by a Photostat Corporation representative. She quickly became highly proficient.

And, finally . . . Mr. James A. Vickery, Public Relations Supervisor of Iowa Mutual Tornado, says, "We are very well pleased with our Masterlith Offset Duplicator and really cannot say enough for it."

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For More Information Circle No. 268

of the burden of tying."

One tying machine is located in the sorting section for tying out smaller jobs. Mail is sorted for city, state and terminal. Machines are not stationary and can be moved as work requires. When enough pieces have accumulated in a pigeonhole (about 25), they are removed and machine tied. Just behind the tying machine there is a mail bag rack with eight labeled sacks. The tied bundle is tossed into the proper sack.

Since work varies in size from 3″ x 6″ to 9″ x 12″, the tying machine must be able to compensate quickly and automatically for the varying shapes. Bundles are tied with a minimum of twine applied with the right tension for each package. The knot holds securely.

Just past the sorting section are two automatic Phillipsburg inserting machines which are capable of inserting up to six pieces in an envelope. At the end of the inserting machines there is another tying machine which is fully capable of keeping up with the 6000-piece per hour production of the two inserting machines.

For light catalogs and circulars, All State uses an automatic Hanke Speedway mailing machine at one end of a 12-ft. power conveyor with a tying machine located at the other end. Pieces coming out of the mailing machine land on the conveyor and move to the tying machine where the operator takes them off and ties them. He then throws them into the appropriate mail sack.

Mr. Rigney said, "We have found that if the tying machine operator does nothing but tie—no sacking or labeling—he can easily keep up with the 18,000

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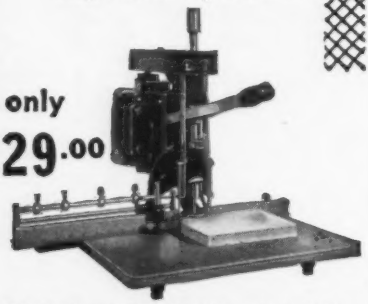

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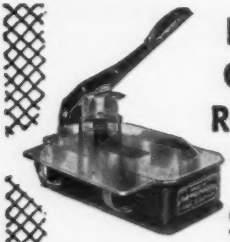

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pieces per hour produced by the mailing machine.

Two tying machines are located at the end of a 30-ft. power conveyor where items like greeting cards and heavy catalog jobs are handled. On each side of the conveyor there is a 4 ft. work table.

"Eight girls work on each side of the belt," Mr. Rigney said, "and assemble the item, usually in cardboard boxes or catalog cartons. After they accumulate 15 or 20 items all destined for one city, state or terminal, they place them on the conveyor. At the other end, one of the two tying machine operators takes the group of packages, ties them and tosses them into the appropriate mail sack. The tying machines are perfectly capable of

At All State Mailers, Chicago, a 30 ft. conveyor belt moves finished work to Bunn Package Tying Machines. Conveyor is a product of Standard Conveyor Co.

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handling the output of the 16 women packers and the conveyors have helped us solve an old problem in direct mail advertising. Previously, when a packer had used up all the space around her, she had to wait until somebody came around and cleaned up her work station. Now she just pushes the accumulated work onto the belt and continues working."

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NEW Books

LINEAR PROGRAMMING: FUNDAMENTALS AND APPLICATIONS by Robert O. Ferguson & Lauren F. Sargent. McGraw-Hill, 330 West 42nd St., New York 36, 360 pp., $10.

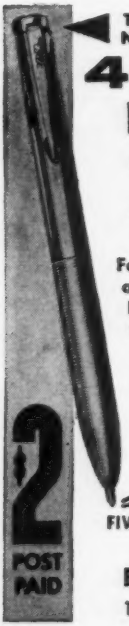
Written for executives and managers at all company levels and illustrated by examples from industry, this book demonstates what linear programming can do and the results it can bring. Without going into higher mathematics, the authors have taken a complex technique and presented it as a practical planning tool, with clear treatment of the fundamentals, methods and applications. The book contains two new computational methods developed by the authors, plus a time-saving refinement, called MODI, of an existing computational method also developed by them.

THE SECRETARY'S HANDBOOK by Sarah Augusta Taintor & Kate M. Monro. Macmillan Co., 60 Fifth Ave., New York 11, 560 pp., $4.95.

The eighth edition of this classic handbook has been revised, enlarged and reset in an attractive new format. Part I, devoted to English language usage, has been enlarged by the addition of rules and examples. Part II, which deals with secretarial duties, has been revised to conform with modern practices.

PUNCHED CARD MACHINE ACCOUNTING & DATA PROCESSING. Gille Associates, 956 Maccabees Bldg., Detroit 2, 172 pp., $9.

This is Volume 7 of the "Punched Card Annual," which is now published semi-annually.



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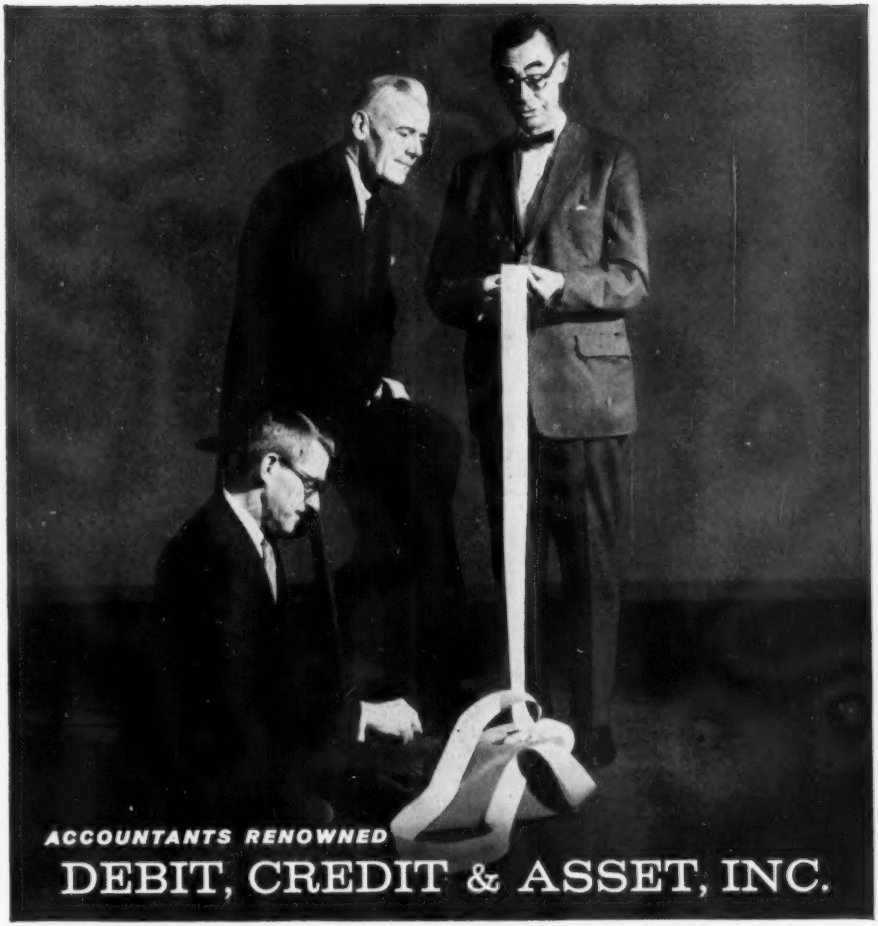

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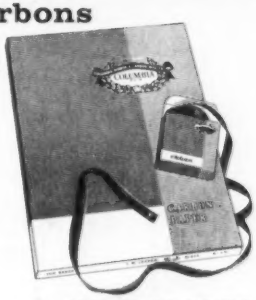
"We couldn't even decipher *our own* ciphers, so blurred were balance sheet copies three and four," said Asset to Debit.

"No longer is ledgerdemain our liability—all credit to Debit," cried Credit, "for switching our business machines to Columbia Ribbons and Carbons!"



Columbia* **RIBBONS AND CARBONS**

COLUMBIA RIBBON & CARBON MFG. CO., INC., GLEN COVE, N. Y.
COLUMBIA RIBBON & CARBON PACIFIC, INC., DUARTE, CALIF.

*T M REG. U S PAT OFF

For More Information Circle No. 200

Specially designed for V.I.P.'s

TRU-SITE®
NON-GLARE GLASS TOPS

ALMOST INVISIBLE GLASS WITHOUT GLARE

What welcomed eye-comfort you get with Tru-Site. That's because a Tru-Site *non-glare* glass top stops annoying, eye-straining light reflection while it protects your desk with an almost invisible glass. No wonder Very Important People insist on *glare-free* Tru-Site.

See a dramatic visual Tru-Site demonstration without cost or obligation. Write today.

DEARBORN GLASS COMPANY
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For More Information Circle No. 197

NEW KEYSORT TABULATING PUNCH

Today's only machine that automatically code-punches and tabulates original records

The new Keysort Tabulating Punch operates on a unique principle. It code-punches quantities and amounts into the body of your original Keysort cards as a by-product of establishing accounting controls. This same machine then automatically processes these proven records through basic accounting functions to the preparation of necessary management reports.

The proven speed and flexibility of Keysort for classification is now coupled with internal code-punching for machine tabulation of original records. This is the Automatic Keysort System . . . a new concept that allows you to proceed in an orderly and profitable manner toward office automation along with the growth and expansion of your business.

At a rental of less than $100 a month, this versatile machine is simple to operate and readily adaptable to centralized or decentralized procedures in companies of all sizes. In many important areas of plant control – job costing; labor distribution; inventory; labor, material and production control; sales and order analysis. In retail customer billing. In service organizations and hospitals – in every type of operation requiring fast, accurate data processing.

Call your nearby Royal McBee Data Processing Representative to arrange for a demonstration, or write Royal McBee Corporation, Data Processing Division, Port Chester, N. Y. for illustrated brochure S-565.

ROYAL McBEE · *data processing division*

NEW CONCEPTS IN PRACTICAL OFFICE AUTOMATION

For More Information Circle No. 249

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salesman, too

.....he made thousands of calls today!

Or as many as you wish — because there is almost no end to the amount and variety of direct mail that travels on papers made by the four divisions of Howard Paper Mills, Inc.*

Maxwell Offset, Maxopaque and Howard Pastel Vellum are especially popular among advertisers, advertising agents, and printers. All are papers offering a great variety of weights, grades, and finishes — all are specifically created for direct mail usage.

So when your direct mail "goes calling" dress it properly on a Howard-made paper. "Howard" is an easy name — and a good name — to remember. Contact your local distributor today.

Ask for **Howard**

HOWARD PAPER MILLS, INC.
Dayton, Ohio

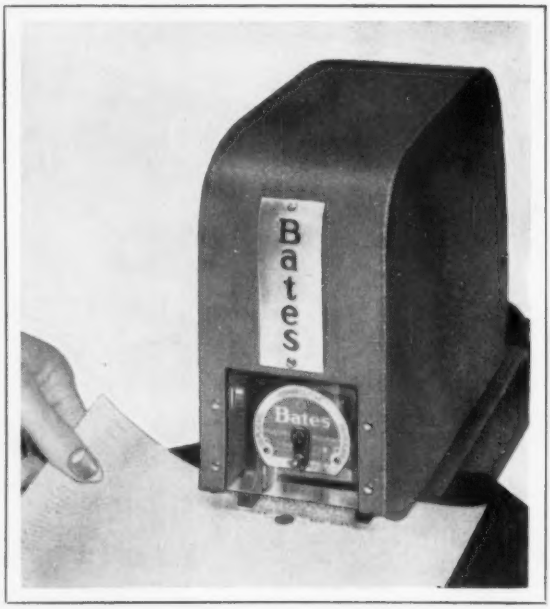
Bonds • Ledgers • Mimeograph • Duplicator • White Print
Process Master Papers • Letterpress and Offset Papers • Envelopes

***FOUR DIVISIONS:** HOWARD PAPER DIVISION, Urbana, Ohio – AETNA PAPER DIVISION, Dayton, Ohio – MAXWELL PAPER DIVISION, Franklin, Ohio – DAYTON ENVELOPE DIVISION, Dayton, Ohio

For More Information Circle No. 240

NOW!

AUTOMATIC ELECTRIC NUMBERING MACHINE by BATES



"Numbers at a touch"

FAST • • EASY TO USE • • DEPENDABLE

- **completely automatic** — numbers at a touch of the paper.
- **top performance** — it uses the famous Bates Numbering Machine.
- **fully adjustable** — for correct positioning of number.
- **interchangeable** — numbering head replaceable in seconds, without tools.
- **flexible** — any Bates Numbering Machine can be adapted to it.
- **safe and quiet** — current cuts off when resetting numbers or changing ink pad.
- **soft rubber base** — prevents slipping, marring desk.

For more detailed information, write to Dept. 50.

the **BATES** manufacturing co.

Orange, New Jersey

New York Office: 30 Vesey Street, New York 7

For More Information Circle No. 228

Camera!

Nine-year-old Anita Helles of Grand Forks, N. D., compares a Smith-Corona electric portable with a 75-year-old typewriter at the University of North Dakota. Anita is one of 28 elementary school students who volunteered to help Dr. John L. Rowe, Business Education Department Chairman, prove that the typewriter is a tool of literacy for eight and nine year olds.

The Diners' Club uses Diebold Super Elevator Files to make sure the right persons get the right bills. In their New York headquarters, 350 office workers handle the accounts of over 800,000 members each month. More than a thousand new memberships are issued each day. During peak periods, as many as 500 references a day are made to the 5″ x 3″ filed cards.

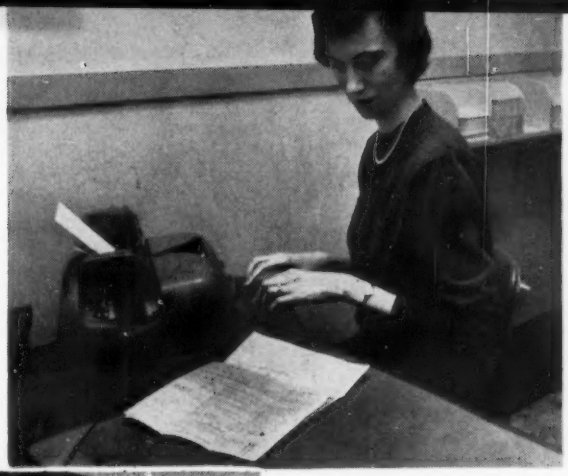
Bank's Small Loan System

The installment loan branch of the Newton-Waltham Bank & Trust Co., Waltham, Mass., handles nearly twice as many small loans in half the time since consolidating all the necessary information on a single record. One operator can now post all the previous day's payments, overdue accounts, new accounts and the other required records in a few hours. Previously, separate records were maintained and the bank usually was two to four weeks behind in its posting.

All necessary information for dealer loans is created in one typing on a 14-part Royal McBee Waxspot-Keysort loan forms set when the account is established. This form includes all documents needed to process the loan. On personal loans, where collateral is pledged, a seven-part set is created and consists of register and audit copies, two insurance copies, alphabetic cross-reference label, customer "Thank You" letter, and Keysort card. Register copies are filed numerically to provide a check of accounts whenever needed. Audit copies are sent with a copy of other accounting records to the auditing office each day.

Keysort ledger cards are pre-numbered and pre-punched for type of loan and account number. Punched holes on all four margins are notched selectively for due date, number and statistical factors relating to that specific loan. After a ledger card is pulled (above left) and payment posted, card is dropped behind a due-date divider. Cards in front of this divider are unpaid and overdue once that date is passed. This enables pulling all overdue accounts at pre-selected review dates to take appropriate action. Reports are prepared by Keysorting ledger (above right) cards according to type of loan, due date and account number. Since cards are filed by account number and all dealer numbers are included, monthly trial balance on outstanding balances is Keysorted only once a month.

Ledger cards also may be Keysorted into sequence to post dealer's reserve either daily or monthly. Cards can be Keysorted by other classifications, for example, whether insurance was placed by bank or by the customer, whether loan is secured or not. Operator does all posting and sorting at a single file. (See opposite page.)



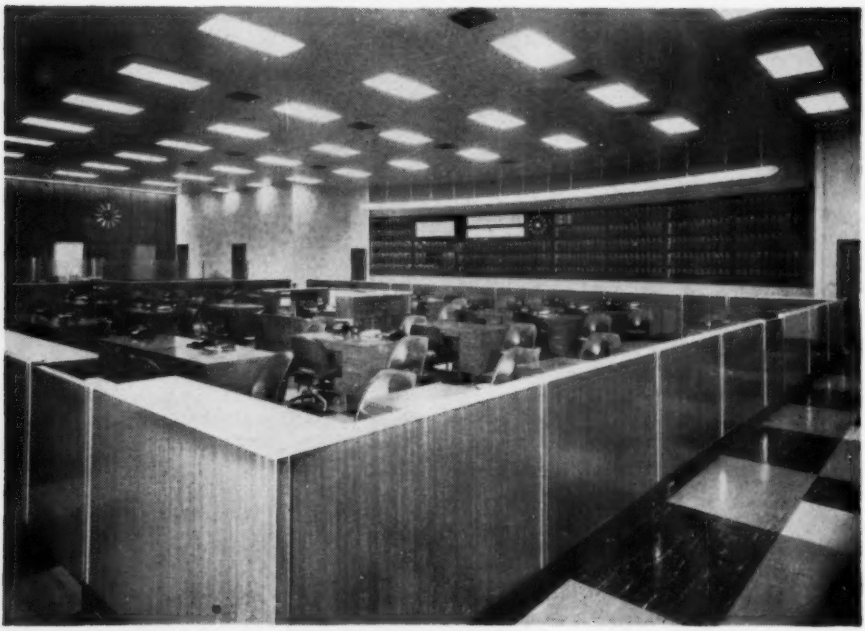
Preparing the Keysort master ledger card from the loan application. This card contains all essential information relating to the account and is used to create all other accounting forms.

Installments paid on each small loan are posted by accounting machine on the Keysort ledger cards.

William W. Crouch, vice president of the Newton-Waltham Bank & Trust Co., examines the only other active file used for small loan accounts. These alphabetical rotary files contain cards with name, address, due date, loan class, terms and ledger card number.

General view of the customers' area in the boardroom of Walston & Co., New York stockbrokers. The Teleregister board (at left) can be seen from any spot on the floor.

New York Stockbrokers' Offices



Another view of the area shown above, with the Teleregister board at right. The offices were designed by L. G. Sherburne Associates, New York. (See page opposite.)

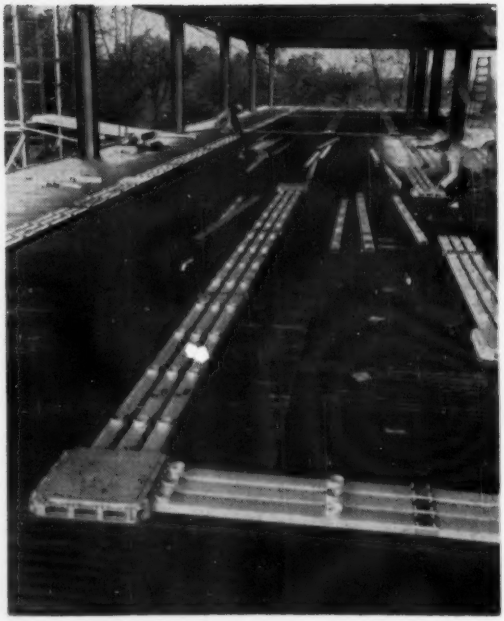
The executive terrace which overlooks the boardroom shown on the opposite page.

A close-up of the control desk in the boardroom. This integrated communications center can send and receive orders by pneumatic tube, control the annunciator panel on the Teleregister board, and has direct telephone connections with the floor of the New York Stock Exchange. An electric time clock automatically time stamps incoming and outgoing orders.

A typical executive office at Walston & Co.

Wiring Flexibility In GSA Offices

Maximum flexibility of interior layout is possible in the new seven-story Associates Building, Columbia, S. C., occupied by the General Services Administration. Metal office partitions can be moved quickly to other locations. Large lighting fixtures in the ceiling may be shifted to provide the most satisfactory illumination. Wiring for office machines and desk lamps is carried in a triple-duct underfloor distribution system, which makes it possible to provide service wherever desired. More than 26,000 ft. of underfloor duct, manufactured by the Spang-Chalfant Div., National Supply Co., Pittsburgh, was used.



Embedded in 3″ of concrete, covered with asphalt tile, the wire distribution system is evidenced above the floor level only by its low-silhouette service outlets. When service is desired at an additional location, it is provided by cutting through the floor to the duct, removing a knock-out, connecting a wire, and attaching a service outlet. Floor ducts carry power, telephone and intercom lines spaced on 7-ft. centers and interconnected by cross runs. Knock-outs are located every 24″ on each duct.

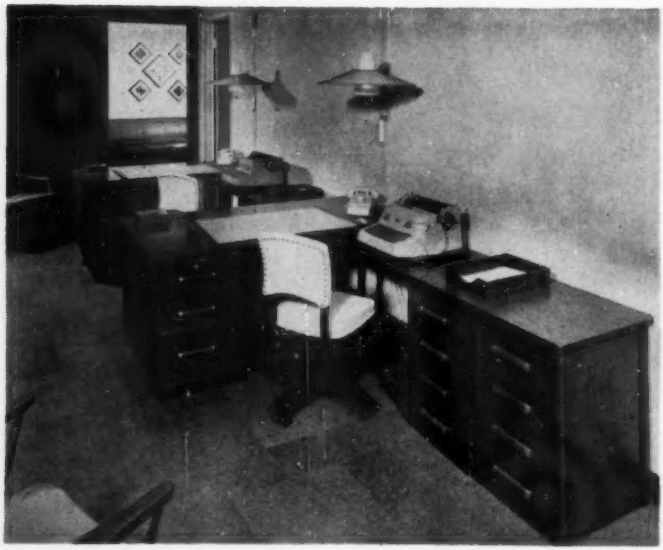
Standard Oil Co. of Indiana in Milwaukee

Private offices in the Standard Oil Co. of Indiana's new regional office building in Milwaukee, showing genuine walnut chairs made by Milwaukee Chair Co.

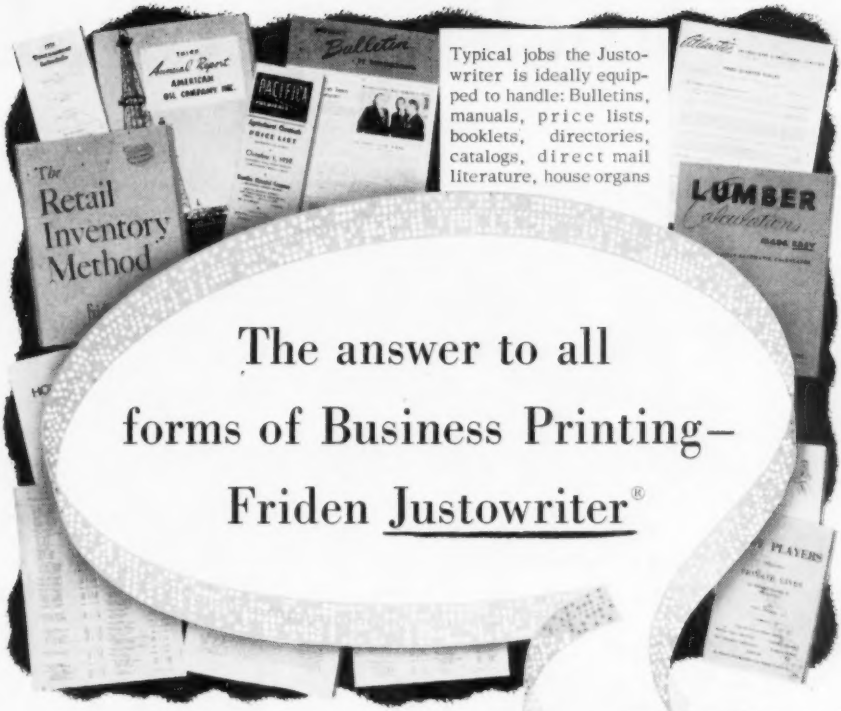
The chairs shown on this page are from Milwaukee Chair Company's Imperial and Prestige series. Installation was made by Forrer Equipment Co., Milwaukee.

WOFI's New Offices

Some views of the new offices of Wood Office Furniture Institute in Washington, D. C. Reception area (at left) has a U-shaped desk by Leopold Co. and a steno chair by Jasper Chair Co. Controller's office (at right) has a Jasper Office Furniture Co. desk and chairs by Boling Chair Co.



General office at Wood Office Furniture Institute, showing Myrtle Desk Co. desks and vinyl cork floor by Dodge Cork Co. All lighting fixtures are by Lightolier.



Typical jobs the Justowriter is ideally equipped to handle: Bulletins, manuals, price lists, booklets, directories, catalogs, direct mail literature, house organs

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Every photocopy is an exact duplicate of the original —black on white for easy reading. Completely permanent, too, with all the handling and filing advantages of regular 24-pound paper. For further information—or a demonstration—call your distributor of A. B. Dick products. He's listed under Duplicating Machines in the classified section of your phone book. Or simply mail the coupon.

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Comptometer Comptograph "220M"
with new multiplication key—more features than any other 10-key listing machine. Mail coupon.

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Insures accuracy in dictation. Lifetime Magnetic belt saves far more than machine costs. Try it today, FREE.

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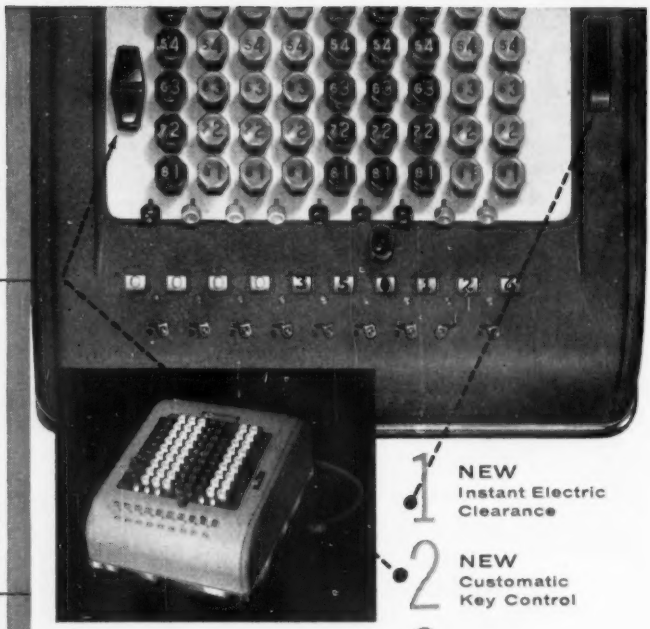
Name_____

Firm_____

Address_____

City_____ State_____



1 NEW Instant Electric Clearance

2 NEW Customatic Key Control

3 NEW Eye-ease Color

NOW...EVEN LOWER-COST FIGURING WITH THE NEW

Comptometer® Customatic

WITH NEW SPEED-UP FEATURES

It's the cost per calculation that counts! The Customatic Comptometer's famous features, augmented by new advancements, enable you to get more and better work done, at still less cost.

New Customatic Key Control. Instantly sets to individual touch. Built-in floating action stops finger-fatigue.

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Let us prove this in your office FREE.

Comptometer Corporation / BETTER PRODUCTS TO BETTER BUSINESS

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PATENTED "STA-CLEAN" METALLIC
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The introduction of new products, and improvement of those already established, calls for a never-ending search on the part of our laboratory staff.

Only by continually striving to find a better way to do things, can we fulfill our obligations to the many people who sell and use the products we make.

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RIBBON AND CARBON MFG. CO., INC.
GENERAL OFFICES AND FACTORY
HARRISON, NEW JERSEY, U.S.A.

For More Information Circle No. 209

no more messy labeling!

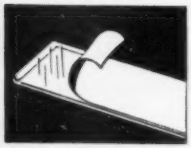
USE OPI Premier LABEL HOLDERS

"will not warp, curl or crack"

CLEAR VINYLITE PLASTIC

SO EASY TO USE

1. SNIP—You can cut to the desired size, easily and quickly.



2. STRIP—Remove backing to expose the activated adhesive.

3. STICK—Apply with finger pressure. It sticks indefinitely to metal—wood—cork—glass—plastic—any clean surface.

4. INSERT—Insert label or card. It's open on three sides for your convenience.

Perforated inserts for easy typing furnished.

Colors Available

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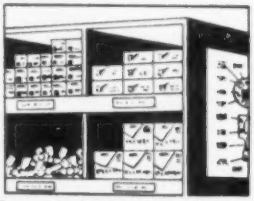
HUNDREDS OF USES

You can enjoy neat, attractive labels anywhere in office, factory, store or home.

- on desk trays
- library shelves
- cabinet drawers
- storage shelves
- display units
- parts bins

AVAILABLE IN 3 SIZES

PS-½—½"x6"
PS-¾—¾"x6"
PS-1 — 1"x6"



For auto dealer parts bins, etc.

Available from your Office Supply Dealer or for information write to

Office Products Inc. 26029 W. 8 Mile Rd. Detroit 40, Michigan

West Coast Distributor: Arch K. Ansty, 171 2nd St., San Francisco 5 • Canadian Distributor: The Luckett Loose Leaf, Limited, Toronto 14, Ontario

Territories available for Dealers and Distributors.

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functional beauty

styling that sells...

send for REGNA literature NOW!

REGNA is the lowest priced electrically operated full safety keyboard machine in the world.

Everyone who sees the new REGNA admires the wonder of streamlined FUNCTIONAL BEAUTY.

Everyone who tries this sturdy and dependable adding machine becomes a "high speed" operator — fingertips literally float over the moulded keys!

Different capacities; fully automatic safety keyboard; models in light grey or ivory. Also low-priced hand operated models.

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It's low priced! It's profitable!
Mail the coupon—Mail it today—
Mail it NOW!

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Please rush more information on the new Electric Regna Adding Machine and outline advantages of becoming a Regna Dealer.

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COLUMBIA'S modern factory in Portland.

COLUMBIA'S TRACTORS speed the harvest in the Northwest.

THIS NATIONAL ACCOUNTING MACHINE is the key to successful operation at Columbia Tractor.

L. C. LACHANCE, Treasurer of Columbia Tractor & Implement Co.

"Our *National* System saves us $4,100 a year... returns 67% annually."

—Columbia Tractor & Implement Co.
Portland, Oregon

"To properly serve our sixty-four dealers and to expedite the handling and analysis of dealer orders, we were prompted to install a National System," writes L. C. Lachance, Treasurer of Columbia Tractor & Implement Co. "Our National System has allowed us to do just that—to improve the accuracy, speed and flexibility of service to our dealers.

"Billing, accounts receivable and sales analysis must be accurate and up-to-date to properly serve our many dealers in Oregon, Washington, Idaho and Alaska. Our National Class 3100 Accounting Machine has made it possible to speed the handling and analysis of dealer orders. Its automatic features enable us to do several jobs simultaneously, without spending extra time and effort.

"Further, we now have increased our profits. Our National System saves us $4,100 a year which represents a return of 67% annually on our investment."

L. C. Lachance
Treasurer of Columbia Tractor & Implement Co.

Your business, too, can benefit from the increased efficiency made possible by a National System. Nationals pay for themselves quickly, then continue to return a regular yearly profit. For complete information, call your nearby National representative today. He's listed in the yellow pages of your phone book.

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ADDING MACHINES • CASH REGISTERS
NCR PAPER (NO CARBON REQUIRED)

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1039 OFFICES IN 121 COUNTRIES • HELPING BUSINESS SAVE MONEY

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. . . and the developing agent
lasts a whole month!"

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Thanks to an exclusive new Copycat development, you can now have sharp picture-like copies of anything printed, written or drawn, *finished and ready-to-use* in 12 seconds!

The key to this speed and quality is Copycat's patented spray process — a process so startling that the machine can be used every day for a month or more without the need to change its developing agent. And since you never have to "warm it up" or clean its belts, Copycat runs practically unattended, is always ready for use.

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are you ready to fill the NEW NEEDS of today's customers?

To meet more fully all of today's requirements Allied research has developed a whole new concept in specialized products.

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THE NEW ALLIED RIBBON COUNTER DISPLAY

Your ribbon sales and profits will get an extra lift with the new Allied counter display. Used alone, or in multiple units back-to-back, or in triangular or square formation, it secures attention at the important point-of-sale. Aside from its serve-yourself feature, it doubles as an impressive wall storage unit, which speeds service and provides a quick perpetual visual inventory of every item. Write today and find out how you can obtain one or more of these displays without charge.

Better still, let the Allied man show you this display and other sales helps that are available to you as an Allied Dealer—without charge—and you'll begin to appreciate the value of an Allied franchise.

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Western Office and Warehouse: 3425 So. Main, Los Angeles 7, Calif.

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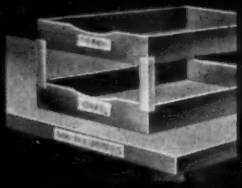


The answer to labeling problems in the office, factory, store, home. Adheres with slight pressure — no tools — no holes in fixtures. Eight transparent colors for instant identification. Label remains clean and legible inside plastic holder and is changeable. Made in 6″ lengths and ½″, ¾″ and 1″ widths. May be cut to length required and makes 3 to 6 ordinary label holders.

At your stationer or write for sample & folder

CEL-U-DEX CORPORATION

NEW WINDSOR, (NEWBURGH), NEW YORK

For More Information Circle No. 212

The machine that made

office dictation and transcribing

50% SIMPLER!

the Norelco® '35'

world's most advanced moderately priced

DICTATING MACHINE

featuring instantaneous, fumble-proof

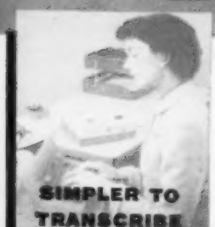
MAGAZINE LOADING

Only

$179.50

complete, with your choice of either dictating or transcribing accessories

SIMPLER TO DICTATE



SIMPLER TO TRANSCRIBE

SIMPLER TO CARRY

For More Information Circle No. 222

With just five simple controls where comparable machines use as many as ten ... with two-second magazine loading where others fumble with old-fashioned hand threading ... with crystal-clear, easy-on-the ear voice reproduction where others require nerve-racking concentration ... the new Norelco '35' makes it at least 50% simpler, easier and pleasanter to give and take office dictation. Engineered by Philips of the Netherlands, world's largest electronics concern outside the United States, the Norelco '35' represents the sum total of modern scientific knowledge as applied to the simplifying, streamlining, ruggedizing and "foolproofing" of moderately priced dictating equipment. Prove to yourself that the Norelco '35' makes all other dictating machines in its price class obsolete. Ask your dealer for a free demonstration at **your** office, without any further obligation on your part.

Check these NORELCO '35' features against any other dictating and transcribing machine at any price:

- ✓ **Magazine Loading**— fumble-proof, jam-proof
- ✓ **Extra-Long Dictating Capacity**— 35 minutes on one reel
- ✓ **Easy Portability**— only 8 lbs.
- ✓ **True-Fidelity Sound**— prevents fatigue in transcribing
- ✓ **Automatic Counter**— extra accurate; pinpoints words
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How the Social Sciences Aid Management's Effectiveness

ALEXANDER BORDEN, Business Consultant, New York

DISCOVERIES of the physical and mathematical sciences are quickly recognized and applied by business to reduce costs and improve products. Various branches of engineering have evolved to fill this need. Acceptance is usually prompt because physical and mathematical laws can be validated in a conclusive manner with comparative ease and at moderate cost.

The application of the findings of the social scientists to the operations of business is, on the other hand, attempted less frequently and such attempts are often unsuccessful or short-lived. It is difficult to establish sufficiently controlled conditions in a business situation to prove the validity of of a hypothesis. Furthermore, the benefits may be so diffuse and of such a long-range nature that identical results may be considered successful or unsuccessful depending on the prejudices of the observer.

The difficulty of validating the concepts of social scientists has resulted in the frequent acceptance of theses which are unsound. Many examples of this can be cited. Notwithstanding Freud's considerable contribution to the science of psychology, his psychoanalytical method rests on a large number of a priori concepts. When subjected to scientifically controlled tests by experimental psychologists, a considerable percentage of these basic concepts were proved to be false.

The way that erroneous concepts in the social sciences gain credence is a common occurrence even in the realm of the physical sciences. The American public spends about $2 billion a year for cold remedies when medical science concedes there is no means of curing the common cold, shortening its duration, or even alleviating the symptoms to any significant degree.

In many business situations, the complex pattern of human relationships and the frequent intense rivalry between competing factions makes objective and intelligent experiments impossible. There is little doubt, however, that the social scientists have made discoveries which could improve the functioning of business. A few of these findings, and how they can be adapted to business use, will be described.

It has been found, for example, that intelligence as measured by existing intelligence tests can be changed and is significantly affected by the social surroundings in which individuals find themselves. Tests of various social and racial groups have revealed distinct but relatively minor differences which can be ascribed to the known cultural environments in which various groups live. There is little if any significant difference between the innate capacities of the members of the various groups.

The executive who has prejudices

with regard to race, sex or national origin is imposing a handicap on himself in his search for able manpower. He is limiting his sphere of selection to exclude a rich source of potentially valuable employees. Thus business competition becomes a potent force in achieving economic justice for minority groups.

Intelligence is not a prime and pure attribute. It is an amalgam of many distinctly different primary mental abilities. Two people, with the same level of intelligence, may have primary mental abilities of very different levels. The strength of the primary mental abilities and their composition determines a person's capacity for a job. Between two people of equal intelligence, one may be capable of three times the other's productive output in a particular job.

The difficulty of establishing the validity of testing hypotheses has led to numerous abuses in the application of testing techniques to business use. The field is deluged with preconceived ideas which experimental data will not substantiate. Tests are available which purport to predict performance in clerical operations. The principal difficulty is that the term "clerical" covers a vast range of duties. Some clerical positions require mature judgment and a degree of creative ability; others require mathematical skill, while others may require little more than finger dexterity and be no more demanding than tightening nuts on an assembly line.

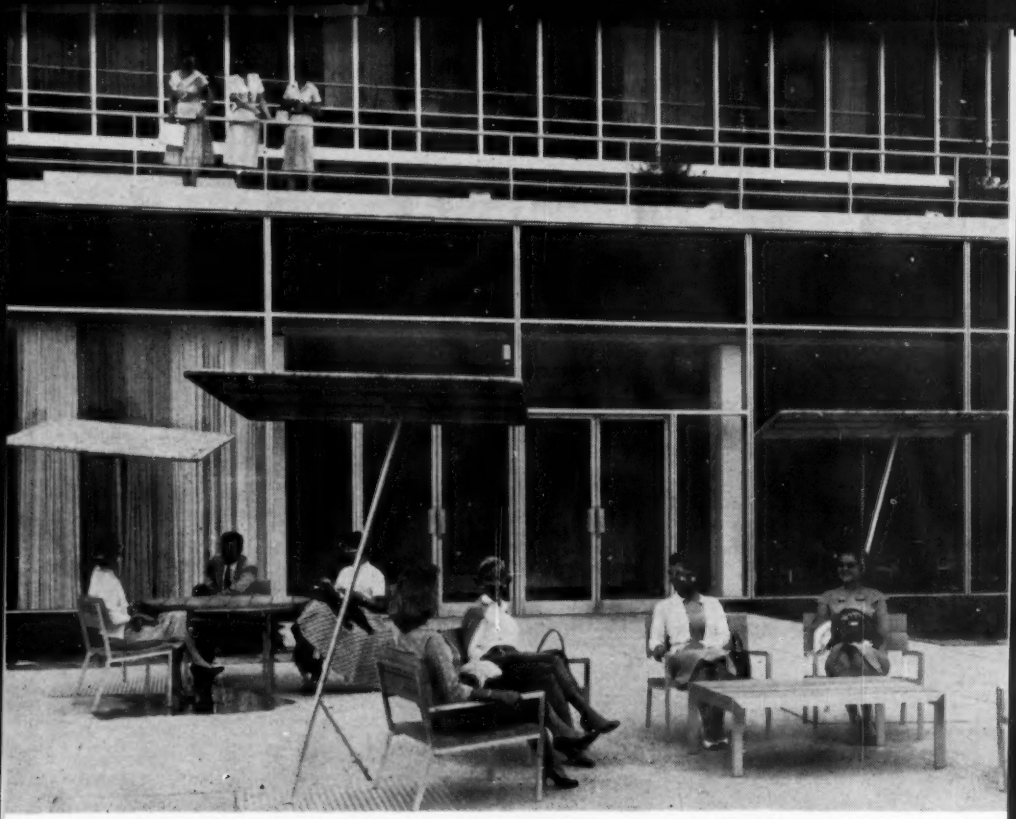
The problem is just as difficult as determining the qualities of a successful salesman. Unfortunately, the abilities needed to sell one product or service under one set of conditions may be completely different from those needed to sell a different product or service, or the same product or service under different conditions.

Three steps are essential to the proper application of testing techniques. These comprise the elements of the scientific method. The first is the careful observation of the job to determine its work content. This step leads to the formulation of a hypothesis as to the mental abilities, character traits or physical skills needed.

The third step is the validation of the tests: comparing actual job performance with test scores to establish the degree of correlation. Perfect correlation cannot be expected because the elements of chance and motivation exert considerable influence on the performance. Furthermore there may be a conscious effort to limit performance because of group pressures.

Another fact learned by psychologists from testing research is the vast amount of untapped creative ability among employees who, for lack of educational qualifications, are in relatively menial occupations. It is estimated that for every person who graduates from college there is another of equal mental ability who never enters college.

Many positions requiring high level abilities, usually filled by highly trained personnel, are so specialized that they can be mastered quickly by the gifted employee with nothing more than some on-the-job training. The shortage of engineers has given rise to the position of engineering assistant. Accounting clerks have, in many cases, assumed all the responsibilities of college trained accountants. A testing program makes



Employees' terrace lounge in the new office building of Reynolds Metals Co., Richmond, Va.

While business is essentially a social activity, the complexities of human nature make it difficult to validate the concepts of social scientists.

it possible to identify these employees and to use their skills to the benefit of both the employees and the organization.

It has been found possible to make studies of the behavior of autocratic, democratic and laissez-faire groups in various work, school and play situations. These studies show that in a nation with a democratic background such as ours, the democratic work group is the most productive, most stable and creates the minimum tension in attaining its objectives. This has given birth to the philosophy known as "consultative management." Its essence is the thorough explanation to all subordinates concerned of the objective to be reached and active solicitation of their opinions on the best way to obtain this objective.

Decisions made in this manner are usually better and seldom worse than those made autocratically. The fact that they participate in making the decisions results in a surge of determination by the subordinates to carry the decision into effect. Contrast this with the grudging and resentful compliance, and sometimes deliberate sabotage, cre-

ated by former methods. Employees whose supervisors practice consultative management become members of a team with a will to produce amazing results.

Consultative management is not only a morale building device. An employee who lives with an operation 40 hours a week has an intimate knowledge of all aspects of the job. His supervisor has only occasional contact with the operation. The detailed knowledge of the employees is invaluable in overcoming obstacles and reaching correct solutions.

This does not mean that an executive must give up his function. He must still make decisions—but only after he has informed his subordinates of the problem or the objective and has actively solicited and carefully considered the information they furnish.

Our largest corporations have grown because their top executives appreciated the need for decentralization. They realized that intelligent decisions on problems in their various branches could not be made in the main office. Consultative management is an extension of the decentralization principle.

How individuals respond in a given situation depends less on inborn personality traits than on habits instilled during prior periods. Habits may assume an insidious or a constructive role in an employee's behavior. To obtain optimum performance from subordinates a supervisor must, by patient training, strive to eliminate negative habits and stimulate positive ones.

Work in the office and factory is honeycombed with unnecessary and inefficient operations. Most of these were started, without benefit of systematic study, to cope with a non-recurring situation or meet an immediate crisis. Through habit, such methods became more or less permanent.

In one of our largest corporations, an operation that occupied four clerks for five years was revealed by my analysis to be completely unnecessary. After a few feeble attempts to save face, the executive responsible for it concurred and the job was discontinued. It had been started in response to a real need which had soon become non-existent.

The most effective defense against the harmful effects of habit is to develop the positive and constructive habit of continual reappraisal. The merciless application of the question, "Why?" to the elements of every operation can sweep away the debris of tradition, inertia and habit. This question must be applied systematically to every facet of work being performed no matter how self-evident its need appears to be.

The benefit derived must exceed the cost incurred. If an operation meets this test then break it down into its elements and subject each to the same scrutiny to insure it contributes to the operation's objective. When only essential operations and their elements remain, review them to see if an easier way can be found by combining jobs, changing their sequence, using differ-

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It is believed that the principal rewards derived by people from their jobs are social rather than economic.

Employees whose supervisors practice consultative management have the will to produce amazing results.

ent equipment, etc. One experienced observer estimated that almost half the work being performed in offices has questionable value and much of it could be eliminated.

Social psychologists believe that the principal rewards derived by people from their jobs are social rather than economic. Every individual has an urgent, almost pathetic, need to feel he is performing a useful function. Many people who have left their jobs revealed they did so simply because they were not given enough to do to keep busy.

In contradiction to these beliefs is the obvious fact that few employees do as much work as they are capable of doing. In his classic work, *Shop Management,* Frederick W. Taylor stated that even in well-run organizations the average employee performs only between 25% and 50% of the work he is capable of accomplishing. Anyone who made time studies knows the frequently great disparity between what employees are capable of and what they are accustomed to doing.

Output is low, despite our psychic needs, because of two principal factors. The first is group pressures. The attitudes of the primary work group frequently exert an inexorable influence on individual behavior. Groups commonly feel that a high level of productivity maintained by one individual will be used as a whip by management to enforce higher productivity from all. This is viewed as a threat to the job security of the weaker members and the group reacts quickly. Few individuals are so strong or self-reliant to withstand their group's ridicule, slander and ostracism.

The other factor is the almost unlimited capacity of human beings for self-deception. We have seen employees who consume so much of their working time with elaborate preparation before starting each operation and who exhibit such painstaking concern for meaningless details that little time remains for production. Such individuals believe they do a good day's work. Many of us must admit that we have had days of bustling activity when we really accomplished little, if anything.

An effective tool to combat these two factors is work standards. The response of employees is usually one of incredulity and indignation. If, however, the standards are accurate and fair, persuasion and retraining will result in the acceptance of the norms and the employees will make honest efforts to meet them.

There are many other findings of the social scientists which can be used by management to facilitate the attainment of business objectives. Most accidents happen to a small minority of accident-prone people who can be readily identified, and this knowledge can be used to reduce accidents. Experiments conducted to test the relative efficacy of praise and criticism, as tools for improving individual performance, show that one has a beneficial effect while the other is deleterious.

The Planning Process

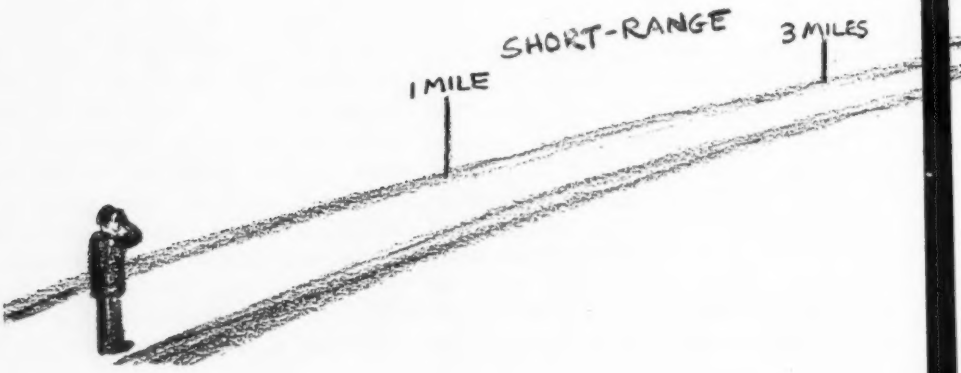
PLANNING has been defined in two words as: future action.[1] The process of planning is to divide the operation into arbitrary spans of future time. This method will bring order to action and a plan, properly executed, that will attain objectives. The spans of time have been divided as follows: short-range, intermediate, long-range.[2]

The illustration below is divided into miles to help describe and visualize the evolutionary action which takes place with the spans of time. When it is viewed as a span from one to ten miles, and we stand at the starting point with eyes fixed on the ten-mile mark, it is obvious that we cannot see the ten-mile mark as clearly as the one-mile mark. The ten-mile mark is too distant. The one-mile mark, however, is clearly in view.

Now picture yourself starting to walk the ten miles. You can take current action at the one-mile mark. Similarly, you can take current action on a work operation and plan from day-to-day. Yet, the three-mile mark is close enough to plan the trip between the one and three mile points. This is short-range planning. Visibility is sufficient to at least anticipate certain action for a short-range. As you move towards the ten-mile goal, the three-mile mark moves closer towards you. What had been short-range becomes current action.

The objective of planning then, is to define the goal and make definite

[1]Dr. Catheryn Seckler-Hudson, *Organization and Management: Theory and Practice.* American University Press, Washington, D. C., 1955, p. 102.
[2]*Ibid:* p. 103.



JOSEPH R. MANNO, Management Analyst, Office of the Controller, U. S. Army Audit Agency, Washington, D. C.

plans for current action. Plan the short-range with a great deal of accuracy, but allow flexibility. The short-range plan will have to be continuously adjusted during the process of merging into current action because all unknown factors cannot be anticipated.

Intermediate planning should be very flexible. It is too far in the future to anticipate action with a great deal of accuracy. Several alternate plans should be made to handle unknown factors that can be anticipated, but the goal of the plan should always be paramount to keep you going in the right direction.

In our illustration, you do not know what is between the three and the ten-mile stretch. To complicate it further, there is a bend and there can be several cut-offs. Perhaps the area ahead is a dense wood or extremely rocky? These unknown factors should be anticipated as much as possible, and alternate plans should be ready for use when the time comes for current action. Your past experience will help anticipate and plan for the unknown.

Finally, long-range planning must be extremely flexible. It is so far away, it is nebulous. Long-range planning is like basic research—scrambling around for ideas using the scientific method. Basic research soon becomes applied research. Similarly, long-range planning is the analyzing of trends, looking beyond the horizon and anticipating future needs and actions. With the proper perspective, long-range planning evolves into programs for current action.

How to Control the Cost of Rented Punched Card Machines

HAROLD B. WILSON, Management Consultant, Albany, N. Y.

MANY MACHINE ROOMS utilizing rented punched card equipment are double or triple the size of their original installations. Additional and more advanced hardware have been added to the basic machines from time to time for numerous reasons, such as: increased volume resulting from higher sales and production; the need for performing non-recurring jobs of indefinite duration; the increased need for additional and more prompt operating and statistical reports, etc. Due to the "emergency" nature of, and pressures created by, these vagaries, the above general reasons often provided enough "justification," of themselves, to add additional rented equipment. Because the additional machines require operators, more personnel may have been added to the staff.

Management may have "justified" the addition of equipment by rationalizing: "If we had continued to perform the work on a desk calculator, or by adding machine, or manually, it would have been more costly." It is possible that this thinking may have been, and may still be, valid. Does this justify, however, the continued payment of rentals for excess or under-utilized equipment? When was the last time that all equipment in the machine installation was evaluated or re-evaluated? As a minimum, it would seem prudent to require a new evaluation prior to the rental of each additional piece of requested equipment. A re-evaluation should also take place periodically to assure that excess equipment is returned to the manufacturer.

In many companies, the rental cost of tabulating equipment has risen steadily. How, then, can management be

HOURLY USAGE OF TABULATING MACHINES: JULY, 1958

DATE	No. 1	No. 2	No. 3	No. 4
1	3:20	5:10	2:30	6:10
2	4:10	3:45	5:00	2:45
3	5:45	4:10	3:10	2:50
4	2:10	4:20	4:00	3:30
7	4:50	6:10	1:10	1:50
8	2:30	3:20	3:50	4:20
9	5:15	2:10	1:40	1:40
10	3:15	5:20	4:30	5:45
11	1:10	1:25	1:00	0:50
14	4.05	3:30	3:45	4:20
15	5:15	2:20	3:00	3:30
16	1:20	1:10	1:00	0:00
17	3:00	2:50	0:00	0:00
18	3:10	3:40	1:00	1:10
21	2:05	1:30	1:20	1:30
22	4:10	2:10	0:00	0:00
23	3:10	2:40	1:10	1:00
24	2:30	2:10	2:40	2:10
25	1:05	0:45	0:20	0:10
28	4:10	3:30	3:45	2:50
29	3:30	3:20	3:10	2:30
30	1:20	1:00	0:50	0:40
31	2:20	3:00	1:40	1:20
Total Hourly Usage	73:35	69:25	50:30	50:50
Hours Available (7 a day)	161	161	161	161
Standard Usage Time (85%)	137	137	137	137
Rated Efficiency (actual use ÷ standard)	53.5%	50.5%	36.7%	36.7%

SUMMARY:

Average hourly usage of 4 tabulating machines ..... 2:40 per day
Standard usage time for each tabulating machine ..... 5:57 per day
(85% of available time—see standards on page 81)
Average rated efficiency of tabulating machine usage 44.6%
Average idleness of tabulating machines 55.4%

sure that each dollar it spends for rented tabulating equipment brings full value in machine hour utilization? The answer seems to be by substituting knowledge for guesswork. When one considers that management is expending $5 in rental for each idle hour of a tabulator, it becomes apparent that guesswork is a luxury few businesses can afford.

To check the steadily rising costs of machine room installations, management should scrutinize each end-product to determine whether it continues to serve a real need, and if the uses to which it is put fully justify its cost. A review of this kind will often disclose that the need for a certain report, which was vitally needed at one time, has long since ceased to exist, yet its processing goes merrily on. The greatest savings that can be effected in any operation result from complete elimination of an activity.

After unnecessary end-products are weeded out, management should review the procedural flow of the remaining *required jobs.* The review should disclose whether the best possible methods are being employed and whether improvements can be made in the process flow. The review should include an analysis of each step in the processing from key punching the source document through interpreters, sorters, collators, reproducers, computers and tabulators, up to each end-product produced.

After possible improvements and refinements are made in the system's procedures and methods, it is necessary to determine the number of hours of machine running time required on the sorters, interpreters, collators, etc., to perform all required jobs on time. Because various jobs may have to be processed a different number of times within a specified period, such as a month, the number of hours of running time for each job on each machine should be timed separately. For repeat jobs, the number of hours of running time should be multiplied by the number of times each such job is performed within the month. In this manner we determine the overall machine processing hours required during a month for each job, as well as the number of running hours required on each specific machine for each job. The total running hours for all the jobs on each type of machine is the basis for determining the number of sorters, collators, etc., required.

Provision for other factors, such as start-up time, board wiring, card handling, etc., must be added to the total in determining the number of machines required. These added factors are automatically provided for if standard usage time is developed and applied. Standard usage time represents the number of hours, derived from a specified percentage of the total machine hours available within a selected period, during which it can reasonably be expected the machines will be in operation.

Page 79 is a sample development of (1) the number of tabulator running hours required for all jobs during a month, (2) the application of the standard usage factor, and (3) a determination of under-usage of equipment. The results indicate that the number of tabulators on hand may be in excess of requirements.

In the sample development, if all required work is being done on time, it would appear that there are too many tabulators on hand. If all required work is not being done on time, there appears to be a need for improved input, card handling, routing and scheduling, to increase the utilization of the equipment on hand.

The rated efficiency of the entire machine room installation can be established by preparing a weekly or monthly schedule for each battery of different machines, similar to the one shown for tabulators, using actual standards developed or those given below. If standards have not yet been developed for jobs on each type of equipment, the following may be used as beginning standards, subject to changes based upon experience.

Machine	Machine Usage Time	Card Handling, Clerical & Set-up Time
Sorters	70%	30%
Interpreters (long runs)	95%*	5%
Collators	85%**	15%
Tabulators (long runs)	95%*	5%
Reproducers	90%***	10%

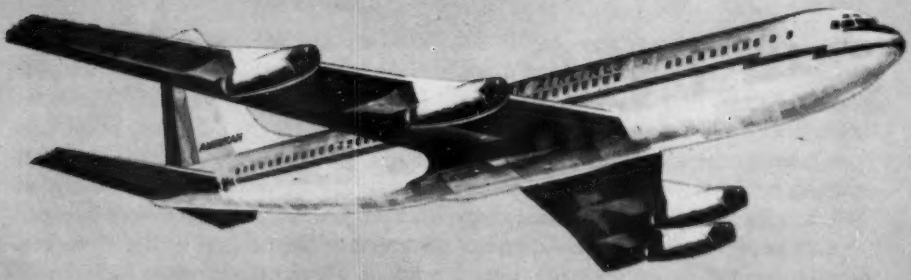
* For short runs, standard may be 80-90%.
** For short runs, standard may be 75-80%.
*** For short runs, standard may be 80-85%.

Unless steps are taken along these lines, no one can say with assurance that additional or fewer machines are required or that the cost of the machine installation is not excessive.

In the foregoing development of the number of different types of machines required, it is assumed the machine room is engaged in a continuous operation with a fairly even flow of work and with the "pipelines filled." If operations are subject to extreme variations in workload, with peaks and valleys occurring periodically, additional factors must be considered. Sometimes peaks and valleys are caused by management policies or practices; the manner in which certain activities are performed or the timing. Under these conditions where the control is within management, it may pay to take steps to even out the flow of work. If peaks and valleys are caused by outside influence, the task becomes more difficult.

During peak periods it may prove far more efficient and economical to utilize present staff and equipment on an overtime basis rather than install additional equipment. During lull periods, held-off non-recurring jobs can be handled to increase machine utilization and to accomplish those jobs which could not be handled previously. If it is anticipated that a current lull will continue for a protracted period due to unfavorable business conditions or other external influences, judgment will dictate whether excess equipment should be returned to the manufacturers.

Past experience has proven it to be extremely difficult to maintain an accurate record of machine running time by manual methods. In numerous instances the data compiled manually cannot be relied upon. Fortunately, instruments are available which, when hooked up with any type of tabulating equipment, will automatically record the running time of each job in hours and minutes. These timers not only assist in determining whether excessive equipment is on hand, but they also are used in establishing standards and in assuring that such standards are adhered to.



Paperwork probably will increase when American Airlines introduces its 600-mile-an-hour Boeing 707 turbo-jets on domestic flights late this year.

Forms to Fly By

SIDNEY SHEPHERD

MOST GROUND operations of an airline resemble those of almost any other office. There are regular departments, such as payroll, purchasing and accounting. And, the familiar ticket offices, reservations and check-in counters, also as well known. But the technical aspects of flying make a difference in running airplanes and an airline. Every single step of every flight is fully and carefully documented. Records are kept of hundreds of items, ranging from cloud formations, to whether passengers' seats are working properly; from the amount of fuel loaded, to a specifically plotted air routing. Some of these forms may become legal documents. Always, the papers are in keeping with American Airlines' axiom: avoid oral instructions—put it in writing.

There are other reasons why airlines and airports swim in paperwork. Flying is a public service seriously concerned with safety. The air transportation industry is regulated and accountable to the Federal Government, through provisions of the Civil Aeronautics Act, and by agencies such as the Civil Aeronautics Administration and the Civil Aeronautics Board.

American Airlines, Inc., is a $306 million business. Last year it carried more than eight million passengers flown. Its flight dispatchers are coordi-

A multitude of records are required to fly a plane and American Airlines' flight forms include a variety of constructions, copying and duplicating processes.

nators. AA has a bank of flight dispatchers, plus flight dispatch supervisers, at La Guardia Airport in New York. These men help blend flight personnel and facilities into a smoothly functioning scheduled airline service. The flight dispatch office is basically a schedule room where dispatchers and flight crews decide the best route to fly depending upon flying conditions.

Crew members arrive in the flight dispatch office an hour before take-off time. They sign in on a Crew Notification and Check-In Sheet which shows flight number, title and signature of all crew members, notified time, and time checked-in. The next form used is the Flight Plan and Log which will become a technical record of the flight.

Flights generally follow preferential routings, previously agreed to by the CAA and the airlines. However, there are times when weather or other factors may cause crews to prefer safer alternate routes. The crew consults up-to-date reports and weather charts transmitted by Times Facsimile machines from government weather stations and American Airlines meteorologists at other airports. Weather forecasts are received on Teletype machines containing hectograph ribbons. As each report is torn off the machine, it is immediately ready to be reproduced by spirit dupli-

The load room's job is to maintain equitable distribution of weight in each plane. Data recorded here includes the weight of the plane itself, the passengers, baggage, cargo and fuel.

cators.

Not only does the weather change constantly, but there may be other changes in flying conditions or the condition of airports. To keep pilots posted, a red-bordered pilot's warning form notes such things as new TV towers, poles or other recently erected obstructions; airport runway construction, military restricted areas, or perhaps a special air show to be avoided.

The pilot receives a 2½″ x 3″ slip which simply lists airplane departure time and arrival time of each leg of his flight from origin to destination. This has proved a time-saving reminder.

A 17″ by 24½″ form, Daily Operations Report, is typed up on a wide carriage typewriter at each of the four AA flight dispatch centers: New York, Chicago, Fort Worth and Los Angeles. This form lists flight number, names of crew, plane number, departure-arrival times at each station, reasons or causes for delays and irregularities, if any. This form is being redesigned to utilize a number of smaller sheets, instead.

Similar to the operations report is a Daily Flight Irregularities Report which is made up of results from all four flight dispatch areas and lists only flight irregularities occurring in the course of the day. Among delays, planes may be held over for changing certain pieces of equipment or delayed ground transportation.

A Flight Schedule Analysis form records any delays in departure, en-route, or arrival because of air traffic clearances, flying conditions, weather or other reasons. These forms, kept from day to day, are later analyzed to help present a mosaic of reasons for lateness in airplane flights which may have a bearing on safety as well as flight efficiency.

Although the Reservisor is used chiefly to sell airplane seats, it also is

utilized to dispatch flight information on outbound flights and to report progress on inbound flights. Arrival and departure times are also reported by Telautograph. Moreover, the airplane itself serves as a flying weather station: pilots report their weather to flight dispatch offices by radio. All this intelligence goes onto paper, for filing or immediate working use, or both.

All technical and paperwork preparations are based on the supposition that airplanes will depart at their designated times. About 97% to 99% of the time, they do. Yet there are times when flights don't fly. This leads to the use of Departure Message forms which tell the tale of advance and actual flight information. One form, sent out 15 to 30 minutes before a plane takes off, goes to enroute stations between the originating and terminating points of a flight, and to dispatch centers and other in-between places that may handle communications, or where intermediate landings may be made. The flight was scheduled and prepared for, but did it take off? On time or how late?

When an airplane does take off, a confirming Departure Message is transmitted. This contains any changes correcting the previously sent advance report. Departure Messages help ground personnel make plans to load, unload or perform other duties for oncoming planes.

During the hour before take-off time, the flight crew consults various reports bound in loose leaf books in the flight dispatch office. These remind or notify

Ben H. Anderson (at right) is supervisor of flight dispatchers at La Guardia Airport, New York. Each of the dispatchers (at left) is responsible for certain records of a plane's progress from takeoff to final landing.

Second in a Series

Electronic Sorting:

Sound

One of the fundamental problems of business data handling is the function of sorting. In most business data processing applications it is quite common for sorting and re-sorting operations to take ⅓ to ⅔ of the total time required.

Until the arrival of DATAmatic 1000, sorting business data electronically could not be justified in terms of dollars and cents. The operating costs of electronic equipment far outweighed its advantages in speed. Cost per record sorted was prohibitive.

Honeywell engineers broke through this economic barrier by making the DATAmatic 1000 *so* fast, *so* efficient that electronic sorting is now not only justifiable, but actually less expensive than electromechanical sorting. Speeds such as these help explain why only DATAmatic 1000 makes electronic sorting economical:

TYPICAL DIGITAL SORTING SPEEDS

Number of Records	Length of Record (in words)	Sort Key (Decimal Digits)	Number of Magnetic Tape Units	Time (in Minutes)
10,000	3	3	6	.75
50,000	15	5	7	28.65
100,000	10	5	4	55.56
200,000	6	4	11	29.17
250,000	5	6	20	30.38

TYPICAL MERGE SORTING SPEEDS (based on 12 digit key)

Number of Records	Length of Record (in words)	Type of Merge Sort	Number of Magnetic Tape Units	Time (in Minutes)
20,000	30	2-way	4	23.35
50,000	15	2-way	4	30.04
100,000	10	3-way	6	30.5
500,000	5	3-way	6	126.12
750,000	4	4-way	8	180.16

DATAmatic 1000's marked superiority in this important sorting function can be attributed to four basic design advantages:

1. faster rate of reading and writing information on magnetic tape, plus the ability to read recorded information in either direction
2. four-section input-output buffer system
3. multiple-duty instructions
4. higher reliability and complete self-checking

The 3-inch-wide, 31-channel magnetic tape utilized in the DATAmatic 1000 permits instantaneous reading and recording speeds of 120,000 decimal digits per second

Economics on the DATAmatic 1000

while retaining conservative values of linear tape speed and pulse density. The result is a sustained transfer rate of 60,000 digits per second. Furthermore, the ability to read recorded information in either direction saves valuable time by minimizing tape rewinding.

A unique buffer design allows simultaneous transfer of information into and out of the high-speed memory. Four distinct operations are carried out independently: transfer of information from tape to buffer, from buffer to high-speed memory, from memory to buffer, and from buffer to tape.

To achieve even greater efficiency with this advanced buffer system, Honeywell scientists incorporated special multiple-duty instructions. For example, a sorting instruction called Double Transfer and Select will perform these functions: transfer a record from specific memory locations to the output buffer, transfer a new record from the input buffer to the same memory locations, extract from the record the digit on which the sorting occurs, branch to a subroutine appropriate to this digit and return to continue the original program.

A comprehensive built-in checking system adds to the sorting superiority of the DATAmatic 1000 by insuring accuracy without the need for internal programmed checks. High circuit and component reliability plus built-in provision for convenient marginal checking virtually eliminate lost time due to reruns.

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For More Information Circle No. 263

personnel of latest changes. Stewardesses read and initial bulletins and notices (*e.g.*, about Canadian citizens going to Mexico); flight engineers read the equipment briefing notebook; pilots, co-pilots, flight dispatchers read other notices and consult field sketches of airports with which they're concerned.

Before a flight can depart, both flight dispatcher and captain must agree upon the best, safest, CAA and company-authorized procedures and routing. Dispatchers also must determine whether a crew is qualified to fly. The dispatcher starts planning some six to eight hours before the crew checks in. He blocks off how much weight a plane will carry and how much fuel will be required. More fuel may be required if a plane should have to buck heavy winds. This, in turn, could mean fewer passengers to compensate for the extra fuel load. These and related details are determined and noted on a Dispatch Release and Weather Report which the dispatcher and captain both sign and the pilot retains a copy.

Capt. Guy Eby studying meteorological data before a flight.

After a captain completes a flight, he fills out a Flight Debrief Report which sums up his day's run: any complaints or special observations on customer service, weather, air traffic control, aircraft condition, airway maintenance dispatch and airports. This debrief form usually is routine, but it often can contain vital information. The debriefing offices prepare four typewritten copies, forwarding the original to the person concerned in the particular action, two

The crew scheduling room at La Guardia Airport where duplicated maps and reports are studied by flight crews after they sign in. (See photo above.)

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copies to the regional flight manager, and one copy to the crew member concerned. The captain's original copy becomes the debrief office file copy. The regional flight manager retains a copy for follow-up and forwards the other to any staff organization concerned. The action addressees (the person at whom the complaint or problem is directed) advises the captain of any action taken and two copies are sent to the regional flight manager.

The dispatcher must sign a Dispatchers Turnover Sheet which reads: "Dispatcher, prior to being relieved of duty, will list below under proper classification, all special information affecting operations in his area which should be known to a relieving dispatcher."

There are still other forms. A 2″ by 18″ Flight Control Strip lists some information about a flight gleaned from Advance Departure forms, plus other data that is radioed to, or by, the pilot and the flight dispatch office. Records of all messages to the pilot are retained on a Flight Control and Air Route Traffic Control Instructions form.

A Flight Plan Message is Teletyped from the airport to notify the nearest main Airway Traffic Control Center. This alerts the control center to the flight plan a half-hour before departure so that they can arrange the sequence of departing flights according to destinations and altitudes desired.

There are other forms, such as the Captain's Irregularity Report and the Report of Irregularity used by ground personnel. The captain indicates his emergency decision, plus reason for the irregularity. The gravity of this form cannot be understated, since most aircraft irregularities are heavily weighted with possible loss of life and/or property. A Captain's Irregularity Report must be signed by him, be reviewed and signed by the superintendent of flying operations if he concurs, and similarly by the vice president of flight after he concurs with the action taken by the captain.

Schedule charts surround American Airlines Stewardess Patricia Clark as she traces her flying program for the month.

All of these forms, centering around the flight dispatcher's office, add up to a daily record to corroborate how many of the scheduled flights were operated, plus how well and how accurately the schedule was maintained. These forms also note the status of all contributing services of the aircraft and the air station. The forms represent a clerical composite of all the decisions made by personnel in the course of flying. Based on these forms, decisions are made whether to cancel, postpone, or add extra sections to a flight.

An Equipment Out of Service form is used by the dispatcher to record planes which cannot be assigned to flights. Two other forms contain spaces for items such as scheduled miles flown to date,

actual miles flown, miles canceled and any unplanned mileage.

Once annually, each flight dispatcher, assistant and chief dispatcher, has to take to the air with a duplicated form, called Dispatcher Route Qualification/ Dispatcher's Assistant Station Visit, which certifies that the dispatchers have traveled to the stations and other places and met the persons with whom they deal by radio, telephone or other means of communication all year long. There's no substitute for talking things over—in person—American Airlines feels.

As a business, this operation is a delicate balance of economics and efficiency on one hand; safety and courtesy on the other. Safety is foremost. The economics of the business calls for as profitable a payload (passengers, mail, baggage) as possible, while allowing for weight and space occupied by crew, fuel, food and equipment. When a plane is gassed up, a Fuel and Oil Requirements form shows where and how much fuel goes into the Douglas DC-6 and DC-7 series and Convairs flown by American. The face of this form has spaces for amount of fuel and oil delivered, where distributed, into which plane, flight and dates. The captain retains the original; the station gets a duplicate. No erasures or cross-outs are accepted. In case of error or any change, the rule is to make new copies.

American Airlines' budget and cost analysis division consolidates regional reports for analysis by management in setting standards and budget forecasting. Above, reports are being checked on a ten-key Addo-x adding machine.

Meanwhile, other jobs require paperwork. For cargo loading there is a Station Cargo Tip Sheet used in conjunction with a Weight Distribution Chart. The Tip-Sheet "tips off" cargo loaders as to where and how much cargo can be loaded properly and safely. Minimum and maximum weights, in relationship to the number of passengers aboard, are listed in a convenient chart. Allowance is made for any cargo refused and any locally added ballast, if required.

While cargo is being handled behind-the-scenes, baggage is being weighed-in and collected at front counters in passenger depots. Here the Baggage Dispatch Record is filled out. Next the Load and Performance Report shows who is aboard (crew and passengers) and in which compartment of the plane they are to enable a proper balance to be computed to render the airplane safe and maneuverable in relation to its load. This form is in triplicate: captain's copy, Treasury Department copy, and local station copy.

Two forms are prepared by the flight crew while en route and after flight termination. The Pilot's Flight and Maintenance Report is a three-part carbonized form for ground and flight

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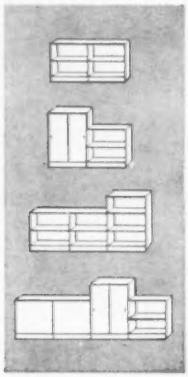

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times, type of flight, date and flight number, aircraft number and information on maintenance items which will require servicing. There's also space for expenses incurred by the crew while away from home base. Upon flight termination the captain turns in the original form to the crew schedule office which checks the items and forwards this form to American Airlines' Statistical Operations in Tulsa, Okla. The maintenance department completes information on the duplicate, showing corrective action and the duplicate is forwarded to Tulsa. The third copy remains in the Aircraft Log Book, available to other personnel, and retained as a permanent record of each aircraft.

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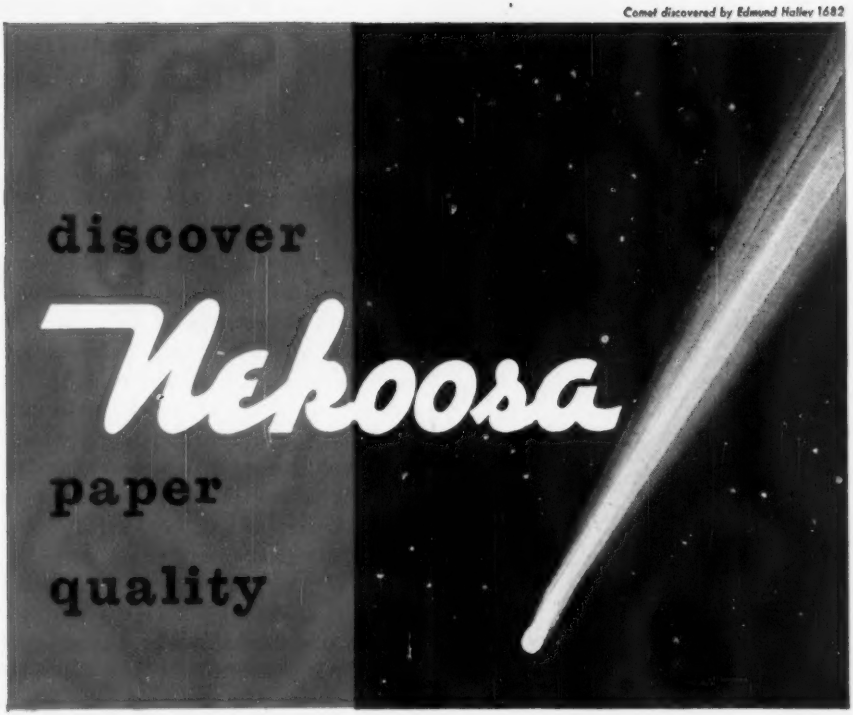

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For More Information Circle No. 353

Work Sampling For Measuring Clerical Work

JOHN A. RITCHEY
Associate Professor,
Industrial Engineering Dept.,
Purdue University, Lafayette, Ind.

THE APPLICATION of work measurement to clerical activities is difficult at best, but its difficulty does not make it less desirable or less necessary as a means of determining the amount or kinds of work performed on office jobs. The difficulties present challenges, rather than reasons for despair. It is our purpose to show how these challenges can be met, in some cases, through the use of work sampling.

Work sampling is of greatest value where it is desirable to learn the proportion of an office worker's time spent on various phases of the job. Such information is often needed in job evaluation work where one phase of the job involves more responsibility (hence more pay) than another. In such cases the final pay rate may be dependent upon the division of time and responsibility. Other applications are in establishing ideal work assignments or in balancing the workloads of various employees. It may also be of interest to know how much time is spent by employees in coffee-breaks or other personal activities.

The usual approach to work-proportion problems is through all-day studies. The observer watches and records an employee's activities for an entire day to learn how much time is spent on any one task. If the duties of the em-

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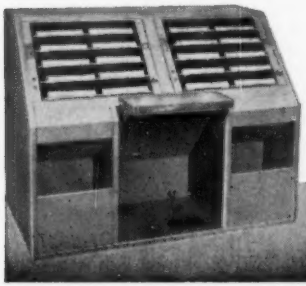

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ployee vary from day to day, it is necessary to observe and record activities for several days. This method has two serious drawbacks. It absorbs the entire time of the observer during the length of the study. This is so costly that the observer often abandons the study and estimates instead. The second drawback is that the presence of the observer generally causes the worker to modify his behavior during the period of observation, and the results are invalidated. These two objections are not present in work sampling.

The theory of work sampling is based on the laws of probability. The analyst makes a large number of random observations of the worker. The ratio of the number of observations of a certain kind of activity to the total number of observations made will yield the approximate percentage of time the worker spends on that particular activity. Let's see how this works by looking at a couple of actual studies. These studies were made on two girls having widely varied assignments. It was desired to know what percentage of their time was spent on various types of activity. The table on page 106 shows the results of the study for the two girls.

Although the results in the table appear to be accurate, we should examine this apparent accuracy to see how good it is. At the moment we shall confine our interest to the percentage of time spent on personal activity for Girl A. Our study shows this to be 21.0%, a figure resulting from 162 observations. It is reasonable to assume that if we had taken 500 observations we probably would have obtained a different percentage—and for 1000 observations,

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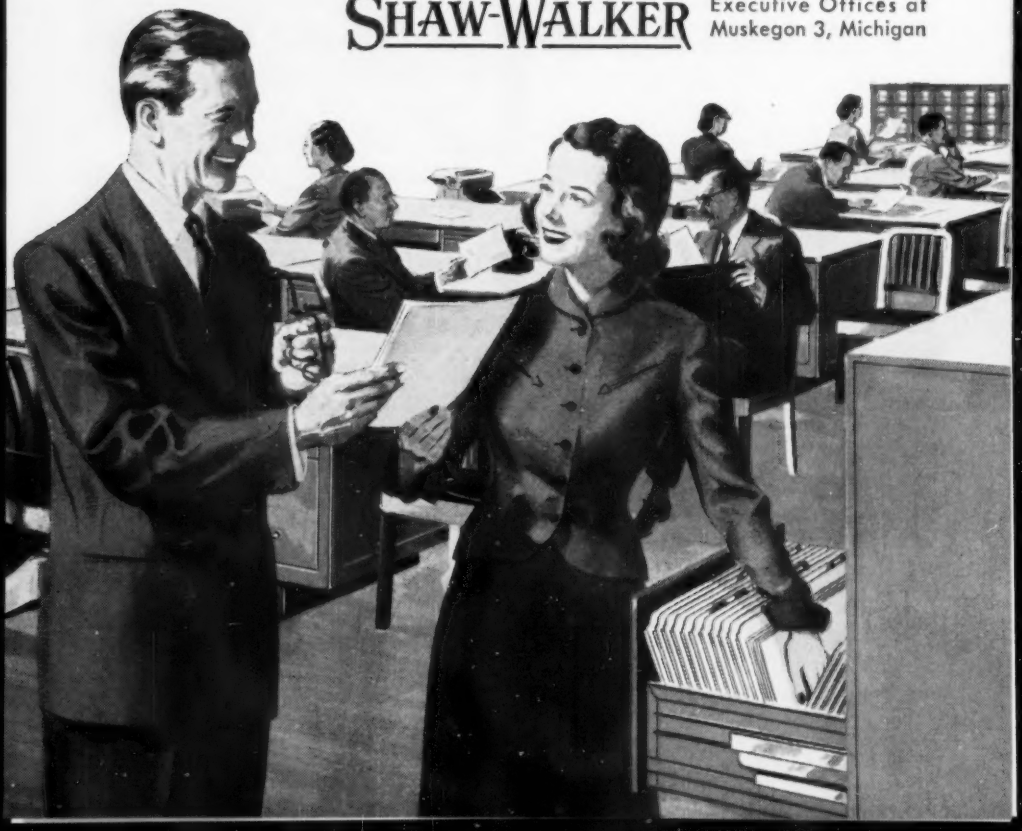

a still different percentage. We cannot say exactly what the *correct* value is, but we can find out pretty well how accurate our estimate of the correct value is. We do this by computing the standard error of the percentage by the following formula:

$$S = \sqrt{\frac{p\,(1 - p)}{N}}$$

Where

S = *the standard error (standard deviation) of the percentages;*

p = *the percentage occurrence of the activity being studied, expressed as a decimal; and*

N = *the total number of random observations upon which p is based.*

For the 21% personal time we have

$$S = \sqrt{\frac{.21 \times .79}{162}} = .032$$

We next substitute our computed value of S into the following formula to give us a measure of confidence in our 21% estimate:

$$y = \frac{2S}{p} = \frac{2 \times .032}{.21} = .30$$

We can now make a definite statement concerning the accuracy of the 21% estimate as follows: we are 70% $(1 - y)$ confident that the true percentage value is between 14.6% and 27.4% $(p \pm 2S)$. We may not be able to say with absolute certainty that 21% is the true value, but we can say with

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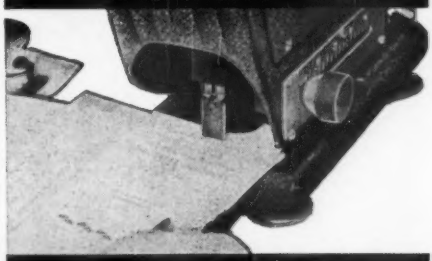

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70% certainty that the true value is within the 15% to 27% bracket. Similar calculations can be made for the other percentages. The degree of confidence and the confidence interval will naturally vary as the observed p varies.

For most studies, this degree of confidence is not sufficient. Confidence of 90%, 95% and 99% are more common in statistical work. The point to keep in mind, however, is that increased confidence in the result has a price. In this case it would be a larger number of observations.

If the degree of accuracy desired is specified in advance, it is possible to compute the number of observations required to give that accuracy. To make the computation we must also guess as to p, the percentage being determined. Let us assume that 95% confidence is desired and that we expect p to be 17.6% (computed from allowed relief periods and lunch hour in this case).

$$S \text{ becomes } = \frac{yp}{2} = \frac{.05 \times .176}{2} = .00440$$

Rearranging the first equation we have

$$N = \frac{p\,(1 - p)}{S^2} = \frac{.176\,(.824)}{(.00440)^2} = 7491$$

This may be a larger number of observations (and greater accuracy) than is desired, however, it illustrates the technique. If interested in several values of p for several types of activity, obviously this computation will yield a different result for N for each value of p used. Normally, one is interested in one particular p and will state con-

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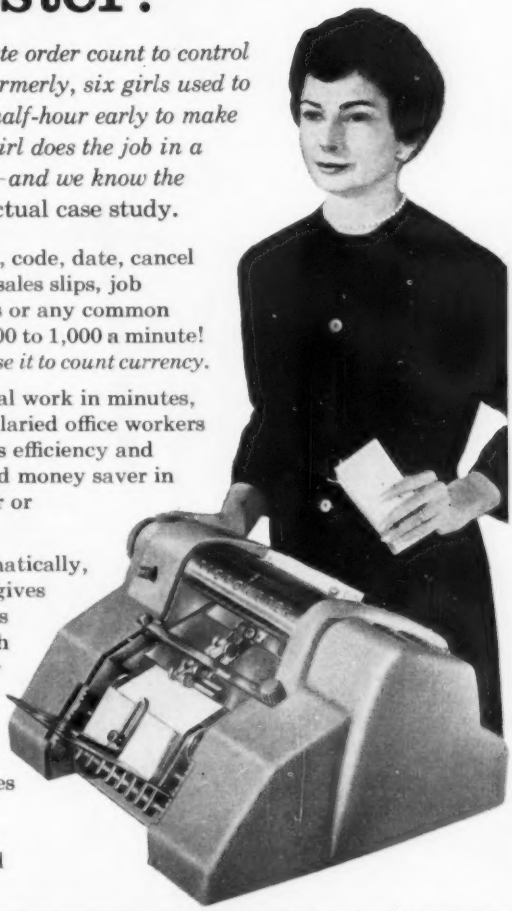

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fidence limits for this value. N is then computed and based on these specified p and y values, letting the other percentages fall where they may.

Before leaving the topic of accuracy, a word must be added concerning randomness and how it is obtained. It was stated that work sampling is based on the laws of probability and that observations were to be made at random. This must be emphasized. Unless randomness is maintained the results have no meaning. The point of randomness is to give each minute of the day an equal chance of being selected as a moment under observation. This can be done by assigning consecutive numbers to each minute of the work day. For an eight-hour day of 480 minutes, number the minutes from 1 to 480. Use a table of random three-digit numbers and, starting at any point, go down the list and jot down 480 numbers. The numbers jotted down are then matched to the list of corresponding minutes during the day. Observations are to be made during these particular minutes. The total number of observations can be spread over any convenient number of days. It is probably best to spread them over a period of two or three weeks, taking an equal number each day.

Having set up the statistical design as outlined above, the analyst then makes the actual observations. His task is to observe the employee during the random minute selected and record what task is being performed. It is easy to do this by making up in advance a check sheet which lists on one axis the random times for any one day, and on the other axis the classes of duties or

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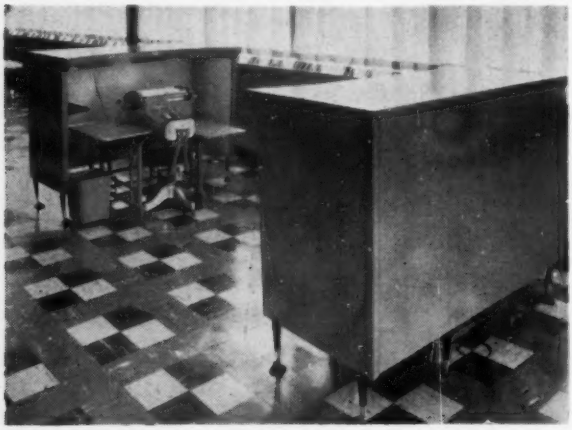
6. Personal (including lunch)	34	21.0
	162	100.0

GIRL B ACTIVITY	NUMBER OF TIMES OBSERVED PERFORMING ACTIVITY	PERCENTAGE OF TOTAL OBSERVATION
1. Supervisory	24	14.5
2. Money and Accounts	52	31.5
3. Ordering	8	4.9
4. Confidential Work	17	10.3
5. Miscellaneous	29	17.6
6. Personal (including lunch)	35	21.2
	165	100.0

activities in which the subject is usually engaged. The time involved in making the actual observation is usually brief, although it may be necessary to spend considerable time getting to and from the employee's work place and making



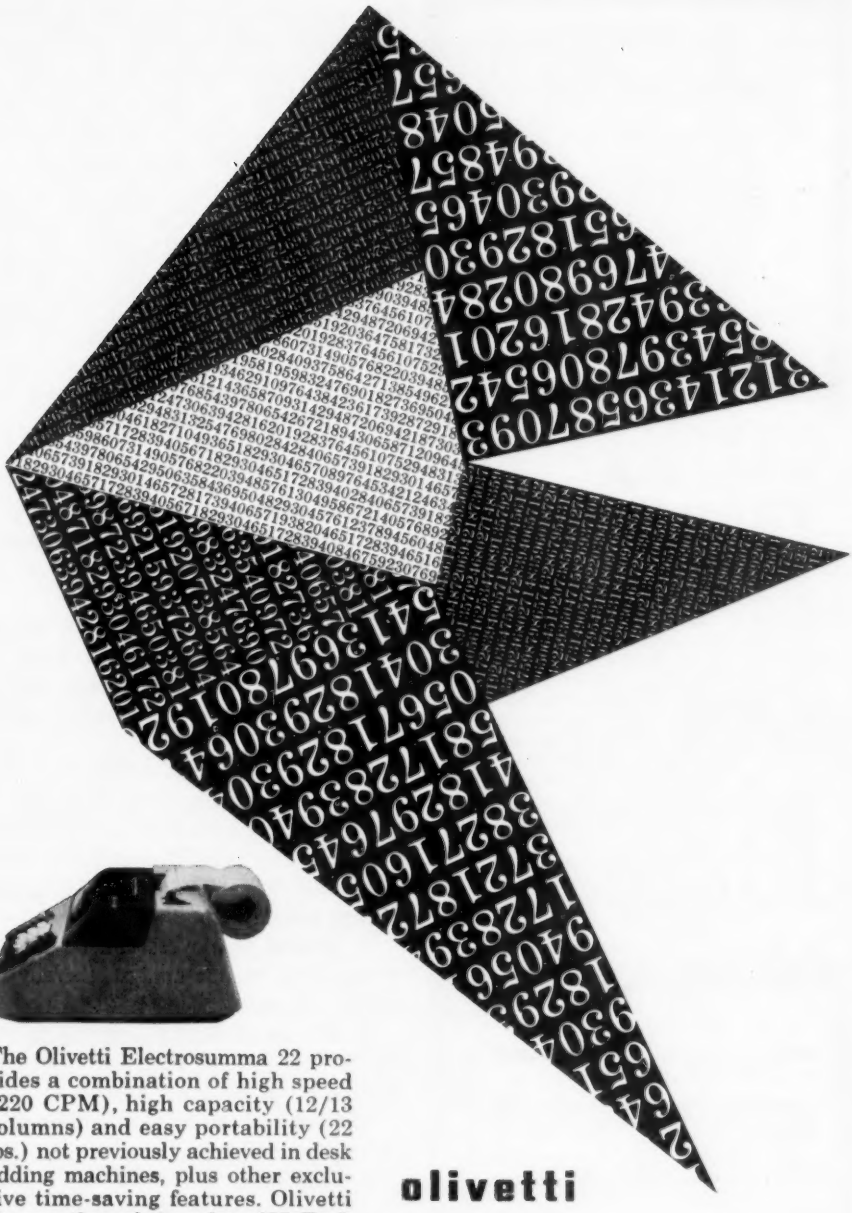
A QUIET OFFICE WITHIN AN OFFICE

Gates Acoustinets have been installed in offices all over the world where noisy office machines such as Teletypes, Key Punches, Flexowriters, Graphotypes and N C R Bookkeeping equipment are used. A Gates Acoustinet provides an office within an office which affords desired concentration on media and perhaps also important is the assurance of privacy of records. Killing noise "at its source" makes sense.

Write for details. Give machines, makes, models you use and measurements.

Gates ACOUSTINET

511 AMERICAN STANDARD BUILDING, BUFFALO 7, NEW YORK



The Olivetti Electrosumma 22 provides a combination of high speed (220 CPM), high capacity (12/13 columns) and easy portability (22 lbs.) not previously achieved in desk adding machines, plus other exclusive time-saving features. Olivetti Corporation of America, 375 Park Avenue, New York 22, N. Y.

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Clip this coupon to your letterhead

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HOLYOKE, MASS., DEPT. O

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TITLE_____

For More Information Circle No. 451

the observation without influencing the employee's behavior. It is possible to make similar studies on a number of employees at the same time with little additional cost, thereby making the average cost per analysis quite low.

In making observations, be particularly careful not to influence the activity of the persons observed. This can usually be avoided by carefully timing the walking trips through the various offices concerned. To stand by the subject's desk and wait for the selected minute would undoubtedly defeat the purpose of the study. This does not imply that observations must be made secretly. On the contrary, the subject should thoroughly understand the plan and purpose of the study, which should be explained to him in advance and his cooperation secured.

The work sampling method of determining percentage of time spent on various office tasks offers some definite advantages over all-day studies. Some of these are:

1. Continuous observations over long periods of time are eliminated.
2. Employees studied are not subjected to the tension caused by being constantly under observation as in the all-day study method.
3. Several employees can be studied at one time by one analyst, thereby reducing the cost.
4. The results lend themselves to statistical analysis so that the degree of accuracy can be made known.

The steps of the method can be summarized as follows:

1. Determine and describe the categories of activity to be studied.
2. Determine the level of accuracy

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As All Other Collators

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Since the introduction of the mechanical collator in 1947, the American Office has awaited the development of a collator that would not only collate at higher speeds, but would **staple and stack automatically as well!**

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IT permits collating at speeds up to **12,000 sheets per hour!**

IT staples collated sets **automatically!**

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Model 8310

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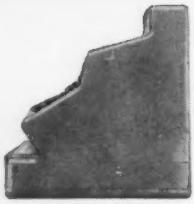


83

For More Information Circle No. 410

desired. Probably 90%-95% confidence is adequate for most clerical studies.

3. Estimate the expected percentages for the various categories of work.

4. Compute the number of observations required. If there are more than two categories of work being studied, the safest procedure is to use a p of 0.5 for the computation. In fact, a p of 0.5 is always safe to use when determining the required number of observations because it will always cause you to take too many rather than too few.

5. Determine the time period over which the study will extend, *e.g.*, three weeks.

6. Compute the number of observations to be taken per day. For example: 1500 total observations from step 4 and 15 working days from step 5 will yield 100 observations required per day.

7. Assign consecutive numbers to each minute of the working day, (1-480 for an eight-hour day).

8. Using a table of random numbers, select 15 sets of 100 random numbers that fall within the limits of step 7.

9. Convert the selected random numbers into specified minutes of the day by referring to list made in step 7. These minutes indicate the exact times each day that observations are to be made.

10. Make observation at times specified and record activity observed.

11. Compute the percentage of observations that fall under each category of activity.

12. Compute confidence intervals for the observed percentages to be certain they conform to the accuracy level specified in step 2.

BEVCO Coat and Hat Racks

store more garments in less space

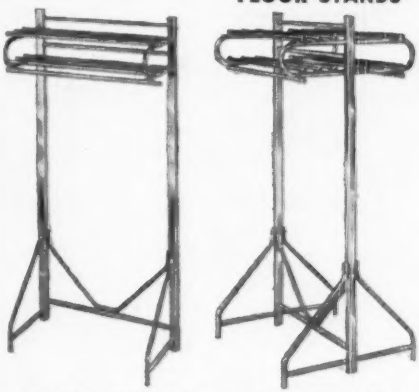
Mirror-like chrome
1″ tubular steel
Immediate Delivery

36″ Single shelf $ 9.95
36″ Double shelf $14.95

- Attach on standard 16″ stud centers.
- Greater strength full 1″ tubing.
- Round tubing collects less dust.
- "U" sections brazed to wall plate.
- Plastic end caps—never loosen.
- Countersunk oval head screws—flush with tubing—not projecting.

Available in single, double or triple shelves—2' - 3' - 4' - 5' and 6' lengths.

FLOOR STANDS



36″ Double shelf $39.95 36″ Island $59.90

Floor stands with 1½″ square posts. Shipped KD easy to assemble.

Accessories available: Ball-bearing casters — umbrella racks, Sturdi Hangers — open & closed hooks. Open hook $3.30, closed hook $3.90

Ask your dealer or write for catalog

BEVCO® Precision Mfg. Co.
831 Chicago Ave., Evanston, Ill.

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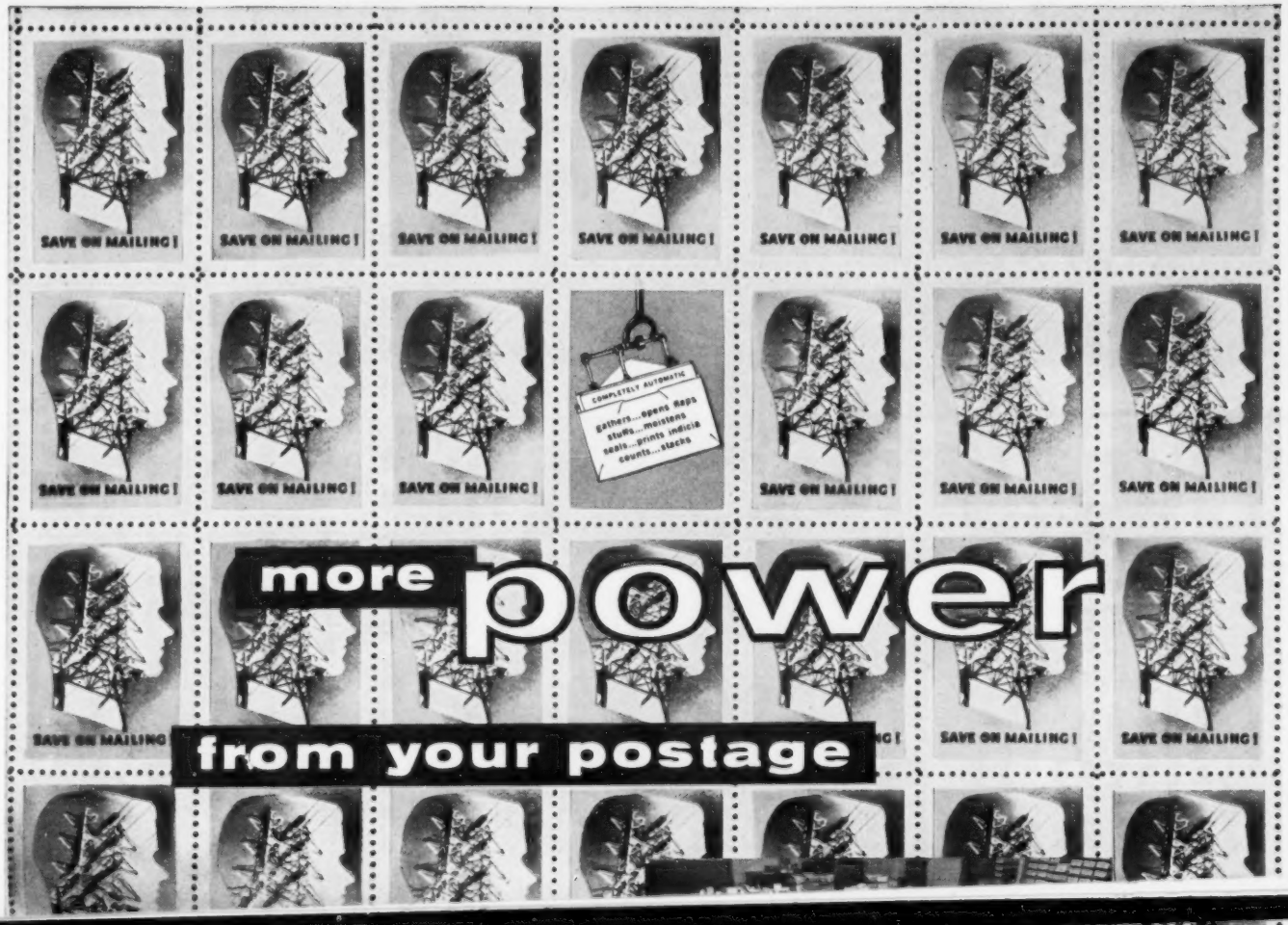
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Save money with the Phillipsburg Inserter

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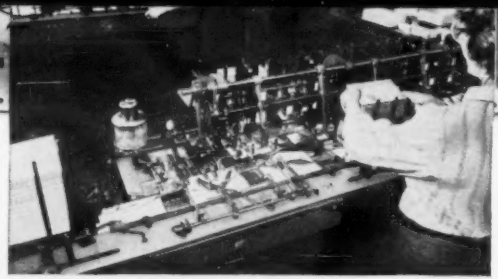

Phillipsburg Inserters at Long Island Lighting Co.

Money-wise mailers have found the way to beat rising postage costs – thru mechanized mail processing on the Bell & Howell Phillipsburg Inserter! They've discovered that the Phillipsburg actually *saves* them money six ways: (1) by doing the work of dozens of hand workers with only *one* operator; (2) by producing twice the volume of mail in half the time; (3) by eliminating expensive supervision and overtime; (4) by inserting extra enclosures at no extra cost; (5) by reducing costly errors and waste; (6) by releasing valuable floor space for more productive use. For example, firms like the Long Island Lighting Co. continue to increase mail volume with Phillipsburg Inserters – thru fast, accurate, low-cost mail processing!

YOU, too, can save with mechanized mail processing! **SEND COUPON!**

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Bell & Howell Phillipsburg

PHILLIPSBURG, NEW JERSEY

Successor to Inserting and Mailing Machine Company

Bell & Howell Phillipsburg Co., Phillipsburg, N. J.

☐ Send brochure, "Wider Horizons with Mechanized Mailing"

☐ Send Case History on _____ *(type of business)*

Name _____

Firm _____

Street _____

City _____ *Zone* _____ *State* _____

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For More Information Circle No. 241

AUTOMATIC SYSTEMS

Current trends in office automation including data processing.

The New Era of Scientific Management

R. HUNT BROWN*

TO SAY THAT the subject of office automation is controversial may be the understatement of the year. Is the electronic computer practical, or is it just a new toy for the controller to play with? Is the computer market oversold? Have the programming and other pitfalls now been cleared? Is it cheaper to buy or rent? Is the computer a money-saver and will the tangible, as well as the intangible, benefits be worthwhile? Is the whole structure of modern accounting, based on batch processing of information, now obsolete. Will it be replaced by one-line or instantaneous and automatic accounting? How soon will the fully automatic office arrive? Will you find a robot sitting at your desk someday? Unlikely, but will you be replaced by a new, young executive trained in the new methods, who has learned how to apply the new equipment? These and other controversial, provocative questions might be settled in your mind by a brief review of accounting developments and office methods leading to the new era.

Since the dawn of civilization, accounting was generally done on the perpetual inventory or on-line basis. If you bought a loaf of bread, the baker cut a notch in two wooden sticks at the same time (one you kept and he kept the other). The account was always up-to-date, and when you paid your monthly bill, instant interrogation was possible.

Business began to get big before the turn of this century, and was forced to the batch or off-line processing of data because of volume of paperwork. The accountant with a green eyeshade at a roll top desk was a familiar figure, but he had to learn new tricks. New office equipment appeared to assist him in his tasks, such as typewriters, adding and accounting machines, and subsequently punched cards. Although Hollerith machine accounting did the 1890 census, punched cards did not really come into widespread use until the early 1920's. Another surge in their popularity took place right after World War II, until practically all sizable businesses were using punched card machines for accounting, either on their own premises or at service bureaus.

The electronic computer was a by-product of World War II, having been developed for aiming anti-aircraft guns. It would calculate at lightning rapidity complex equations having to do with trajectory, wind velocity, speed and direction of enemy aircraft—such factors that the human mind is not capable of

*R. Hunt Brown, an independent licensed professional engineer, is president of Automation Consultants, Inc., New York, publishers of the loose leaf handbooks and updating services, *Office Automation* and *Office Automation Applications*, also of *Office Automation News Bulletin*.

reckoning in the few seconds allowable. Only during the last decade has the digital electronic computer been applied to business. There are now thousands in use and thousands on order; large, medium and small of either general or special purpose types.

In 1952, Teleregister Corp. installed a special purpose reservation system for American Airlines in New York. The first important general purpose business computer was Univac I, which Remington Rand built for General Electric in 1954 to do clerical work at Appliance Park near Louisville, Ky. (The first Univac used for clerical work was that of the Census Bureau in Washington in 1951.) IBM began installation of small punched card electro-mechanical computers in 1948, but did not join the electronic computer business parade until 1954 with its 650 card computer and 1956 with its 702 (now replaced by the 705). Other manufacturers have joined the parade. In the large-scale class are Univac I and II of Remington Rand, Datamatic of Minneapolis-Honeywell and Bizmac of RCA. Both Philco and National Cash Register Co. plan large transistor computers. In the medium-scale fields, Burroughs is gaining ground. Bendix and Royal McBee have many installations of the smaller machines. In the desk-size business computers, Burroughs, Monroe and Underwood have been active, and Clary has announced a small electronic computing machine.

Something else was added in 1954 to data processing. Paper tape punches and readers were connected to ordinary office machines to capture (as a by-product of the original manual keyboard entry) valuable coded information which could be transmitted over available communication circuits and then fed to a central computer. Punched tape had been with us since 1870 in printing telegraph systems, and now we have taken advantage of this valuable principle in business data processing.

The new machines and techniques are bringing us back to the old but optimum method of instantaneous accounting. The increase of on-line computer use is ample proof of this trend away from batch processing or off-line accounting.

Manufacturer, Type, Model	Average Price ($1,000)	Average Rental ($/Mo.)	No. Delivered	First Shipment
Punched Card Calculators and Computers				
IBM 604	26	550	3750	12-48
IBM 607	52	900	350	10-53
IBM 608	119	2250	10	12-57
Univac 60	75	965	500	6-54
Univac 120	98	1275		
Large-Scale Computers				
Datamatic 1000	1750	35 M	3	12-57
IBM 704	1900	44 M	80	12-55
IBM 705	2300	47 M	85	11-55
IBM 709	2600	55 M	0	1958
NCR 304	850	20 M	0	1959
Philco Transac S-2000	1000	20 M	0	1959
RCA Bizmac	1200	–	3	1956
Univac I	1150	21 M	45	4-51
Univac II	1400	26 M	4	12-57
Univac 1101, 1103	1500	30 M	30	5-50
Medium-Scale Computers				
Bendix G-15*	60	1750	115	1955
Burroughs 205	250	6000	90	1954
Burroughs 220	320	8500	0	1958
El-Tronics Alwac III-E	114	3450	37	2-54
IBM 305 Ramac	190	3200	75	1957
IBM 650 (All types)	200	3750	950	11-54
Univac File Computer 0	147	2450	41	1956
Univac File Computer I	252	4190	18	1958
Small-Scale and Desk-Size Computers				
Burroughs E101	38	1000	180	1955
Burroughs F2000	11	–	0	1958
Clary ECM	15	–	0	1958
IBM 610	55	1150	1	1958
IBM 632	6	–	1	1958
Monroe Monrobot IX	8	275	1	3-58
Royal Precision LGP-30	50	1100	140	1956
Underwood EBC 100	28	825	16	8-57

* Classified as medium-scale when peripheral equipment is added.

Computer comparison chart. Estimates are used where exact figures are not available.

Big business has gone in for data processing in a big way since 1954, but office automation is seeping down to medium and small business.

How about the new techniques of scientific management such as automatic decision-making and operations research? General Electric is a chief proponent, with many other large companies following suit. New methods of inventory and production control, to name only a few used by the "opsearchers," are sweeping the country.

The approach of management, in many instances, has been to install a computer but, by removing one bottleneck, others have been created such as communication and point-of-sale problems. The writer is of the opinion that the question of applying the new techniques and machines should be considered from an overall viewpoint. Otherwise, one may be polishing brass on a sinking ship.

Any investigation into office automation by any size business will bear fruit, even if it only uncovers obsolete systems and procedures. Where is it all leading? Unless you are fully informed, or are trying to learn about the new machines and techniques, you will be as obsolete as the Dodo bird in a few years, in the humble opinion of this writer. A new era of office automation is now in full swing, and is moving faster and faster. One way to learn is by reading, and you will have no trouble locating reading material. There probably has been more written on this subject in the last five years than on space travel. You may have some difficulty locating media for the layman if you are a novice, since most of the authors are either highly specialized or technical in their explanations.

Another approach is through management organizations, many of which have held seminars and conferences on data processing. Most of the colleges and universities now have courses in the subject, although these are mainly on programming and other more advanced phases. The business machine manufacturers are good sources of information as to how their new machines might be utilized in your company. The larger forms manufacturers are well versed in the new methods of data processing. Some of the large accounting firms have management service divisions, well acquainted with the new techniques and machines. There are consulting engineering firms specializing in the new field, and many management consultants have had considerable experience in data processing projects. Equipment exhibits have featured new electronic equipment since 1954.

A new breed will manage business in the future. They will be well versed in the new techniques and machines. All is not lost, however, if you have not kept pace with developments. There is still time to learn and to protect your hard-earned position. But, like the modern doctor, you will be subject to a continuous re-education the rest of your life, because standing still means going backwards. Some may view this situation as painful and even frightening but, if you can acquire a thirst for knowledge, there is time to save yourself. It all boils down to "automate or die," and your company may be out of business in ten years unless it adopts office automation!

Here's the efficient way to reimburse your salesmen under the Traveletter System

8:31 A.M. Friday — Salesman completes his expense report

8:45 A.M. — Salesman cashes Travelorder for week's expenses and returns expense report to home office

8:48 A.M. — He's off to make his sales calls

The ***Traveletter*** System for reimbursing travelers is that simple. Each week the holder of a ***Traveletter*** authorization writes a Travelorder [draft] for his actual expenses — not to exceed *his* authorized limit. He may cash his Travelorder through his normal channels, or when he travels, at any hotel or motel. He then returns his expense report to the home office in the manner prescribed by his company.

Thus the traveler is immediately reimbursed in cash and the home office is relieved of the necessity of making cash advances, writing expense checks and rushing approval of expense reports.

The ***Traveletter*** System is used by companies employing from 1 to 1500 travelers, including United Aircraft Corporation, American Cyanamid Co., Western Electric Co. and many others.

1. Substantially increases the control of travelers expenses
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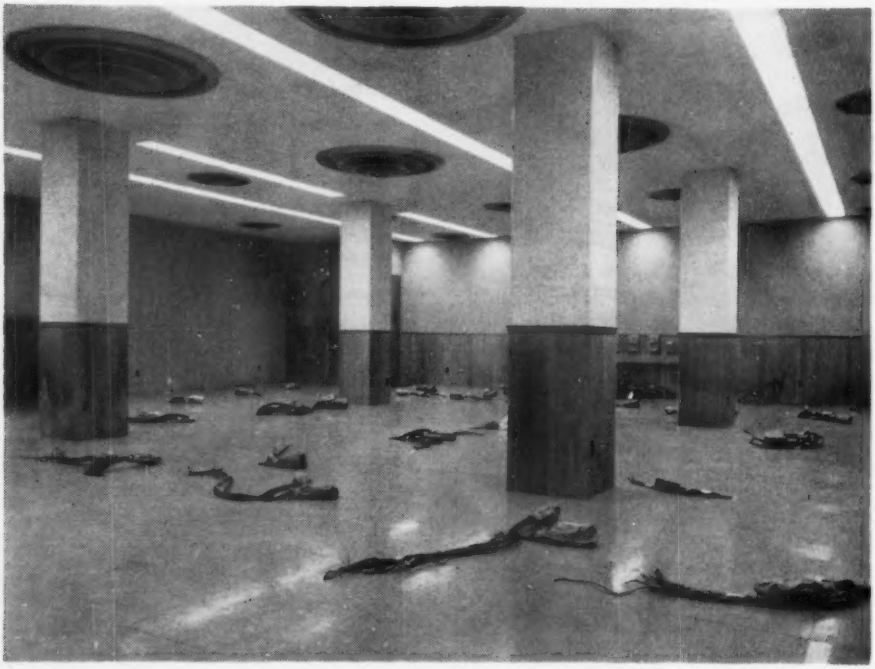
For More Information Circle No. 296

How TVA Built Its Data Computing Center

CARL ANGLE, Chief, Office Methods Staff, Tennessee Valley Authority, Chattanooga

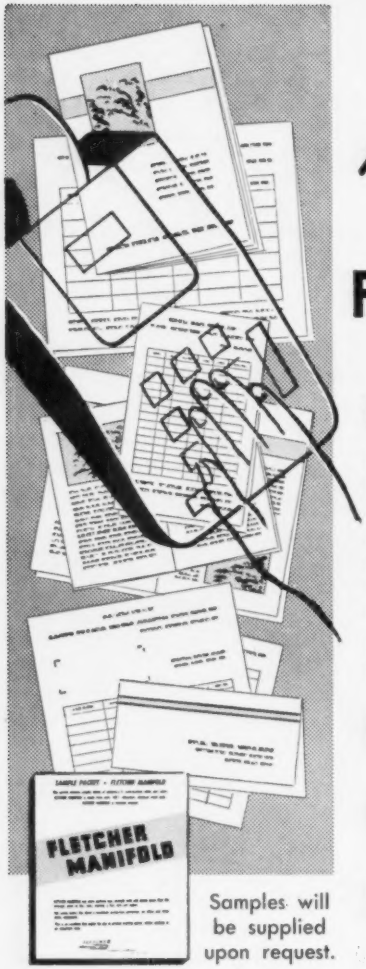
BIGNESS TODAY is commonplace, not Government alone, but all major enterprises are pressed for more and better records faster, for solutions to problems soon enough to have operating and forecasting value, for equipment that releases men from the drudgery of repetitive routines and permits more time for creative thinking. Defense agencies have employed electronic computers on scientific problems for several years. Others, like Social Security,



The remodeled post office building in Chattanooga awaiting installation of TVA's computing equipment. (See photo on page 123.)

Cost of Altering the Old Post Office Building in Chattanooga for TVA's Computing Center.

Superstructure		
Suspended acoustical ceiling (fiberglass)	$ 2,546.07	
Removable sectional floor, plywood with steel backing, rubber tile working surface on steel framing	8,008.20	
Soundproof partitions, oak panelling, removable and fixed-view windows, doors, etc.	6,333.15	
Subtotal	$16,887.42	
Electric Lighting and Power		
New 2000A entrance to building with 2500A disconnect switch, 2000A bus to distribution, 3 800A breakers, 1 600A breaker, and related 20A to 100A breakers		
Underfloor and overhead power outlets and connections in conduit	$13,305.00	
Recessed instant-start louvered fluorescent light fixtures with recessed panel, grounded duplex receptacles, and related wiring	1,880.13	
Subtotal	$15,185.13	
Air Conditioning		
Two Carrier summer/winter type duplicate systems (except duct system) of 55 tons each with inside evaporator condensers	51,581.86	
Subtotal	$51,581.86	
Total Computing Center Cost		$ 83,654.41
Program Testing Rooms and Supervisors' Offices		
Remodel space into three programmer rooms, three offices for supervisors and redecorate	$ 2,915.92	
Air condition programmers' and supervisors' space	3,790.81	
Subtotal	$ 6,006.73	6,006.73
Total Computing Center and Personnel Space Cost		$ 89,661.14
Tabulating Services Space		
Tile floor on plywood subfloor	$ 1,735.92	
Suspended acoustical ceiling (fiberglass)	1,697.37	
Air-conditioning--two 10-ton package units (including units for payroll employees on 2nd floor)	11,372.45	
Electrical work	350.00	
Subtotal	$15,155.74	$ 15,155.74
Relocation of Offices Originally Occupying Space		
Removal of previous occupants of Computing Center and Tab Services space, alterations and rearrangement of space in which offices were relocated	$26,943.84	$ 26,943.84
TOTAL COST OF COMPUTING CENTER, PERSONNEL SPACE, TABULATING SERVICES SPACE, AND RELOCATION OF OFFICES PREVIOUSLY OCCUPYING THIS COMBINED SPACE		$131,760.72



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FLETCHER MANIFOLD is a watermarked, tub-sized, titanium treated 9 pound manifold that will . . .

1 SAVE postage, especially in quantity mailings, direct mail, envelope enclosures, air mail.

2 SAVE original cost; Fletcher Manifold costs less per ream than heavier papers.

3 SAVE half the space that heavier weight papers normally require in files.

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For More Information Circle No. 454

TVA's computing center after installation of equipment.

have used them in the mastery of huge volumes of repetitive paperwork routines. TVA's experience has been such that it combines the two. Ours is a case study of electronic data processing adapted to the multiple purposes and objectives of regional development. Certainly in TVA's first 25 years there has been enough of science and enough of paperwork to satisfy any machine.

TVA was the nation's first integrated development of the natural resources of an entire river valley, all of them—waters, soils, forests and minerals—being considered as parts of a single problem. Beginning with the region's water resources, and using Wilson Dam as a starting point, TVA built 20 more dams, purchased four from a private utility, and arranged with the Aluminum Co. of America for integrated operation of six more. Today a multiple-use system of 31 dams and reservoirs harnesses the Tennessee River and its mountain-born tributaries in the economic interest of the region.

The system provides a 650-mile navigation channel from Knoxville, Tenn., to the Ohio River where it conects with the national inland waterway of 9,000 miles, thus fostering commerce between the valley and other regions. In 1956, this channel carried 2 billion ton-miles of freight. The same system provides 12 million acre-feet of storage for regulation of floods, both in the Tennessee Valley and in the lower Ohio

and Mississippi River basins. Direct damage averted by the system thus far exceeds $130 million. In early 1957, the system reduced by 22 ft. a flood which would have caused about $66 million damage at Chattanooga alone.

The system produces huge blocks of hydroelectric power which, coupled with power produced by eight major steam plants, has contributed greatly both to regional productiveness and the national defense. In the fiscal year 1957, TVA sold 57 billion kilowatt-hours of electric energy, compared with 1½ billion kwh. produced in the same region in 1933. More than half of this power was used by Federal agencies concerned with national defense.

What happens to a river affects the land. What happens to the land affects the people. TVA reshaped the Tennessee River, and part of the energy gained went into the development of new and improved fertilizers to re-establish the waning agriculture of the region. Since 1934, TVA has supplied from its forest nurseries 315 million of the 366 million seedlings used by 45,000 landowners to reforest about 327,000 acres. By this means TVA helps the valley become a greater source for paper, pulp, lumber and other wood products.

Here are samples of the problems a regional agency like TVA faces. They provided a kind of yardstick during our feasibility study for measuring whether electronic data processing could help us now or in the future.

1. Determining how to distribute the generation of electricity required by the homes, farms and factories of the valley, among the different hydro and steam plants, to minimize TVA's fuel bill. This is one of the first technical problems that will be solved on the computer.

2. Predicting the crest of the Tennessee River during heavy rainfall. Millions of dollars of property value, and sometimes lives, depend upon the ac-

T. M. Blaylock at the control panel of TVA's electronic computer in Chattanooga.

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curacy of forecasting methods.

3. Determining when and where to locate new generating capacity. This problem is related to No. 1, but involves long-range forecasts. Making these forecasts can be an expensive guessing game.

4. When, where and what kind of transmission lines to build for the future. This is another sizable economic problem that should be explored as a computer application.

5. Acquisition and storage of maintenance material. This problem grows in the same ratio as the physical plant. When, where and what quantities of each item to stockpile is both a clerical and an engineering problem.

6. Accounting and budgeting. The classic example of clerical routines that can be programmed is the payroll. We have had as many as 42,000 employees, the total number varying with the size of our construction activities. Whether all our accounting routines can be automated is a challenging problem for the future and probably several years away.

We did not expect to get all the answers and present them in our first feasibility report. We hoped, rather, to find enough on the positive side to justify acquiring a machine, and to justify further research later. The study was made by a wide variety of talent and skills on a highly decentralized basis. We held the usual number of short-term educational meetings. We sent a great many employees to programming schools. We evaluated all available equipment. Our attention was limited to large equipment because of the amount of information about TVA's transmission system that must be loaded into the machine for power studies.

Our faith in the decentralized approach to the study was well founded. While our finance division, with the assistance of the office methods staff, was studying payroll and other data processing applications, other groups of employees in the power, chemical engineering and water control planning divisions were studying various scientific applications. At one stage we had economic justification for a medium-size computer. We actually placed an order for an IBM 650. We expected it to be an interim step to one of the larger machines.

A few months later the power engineers justified the acquisition of a large computer. The primary justification was proved in our economic loading problem. From data received hourly from each of our 43 generating points, we compute what generating equipment is to operate in the next hour. This will be done hourly, 24 hours a day, seven days a week, and will have priority over all other data processing. It will interrupt any other processing that interferes with its regular schedule. The answer will be worked out in approximately four minutes. After the four-minute interruption, the machine will resume other processing. In a little more than 1½ hours of operation each day for this one problem, we expect to effect economies in generating power that will more than pay for our electronic equipment.

The full significance of this must be read in the light of the expected growth in the use of electricity. Normal growth will necessitate an increase in generating capacity of at least 10% each

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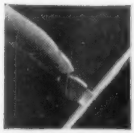

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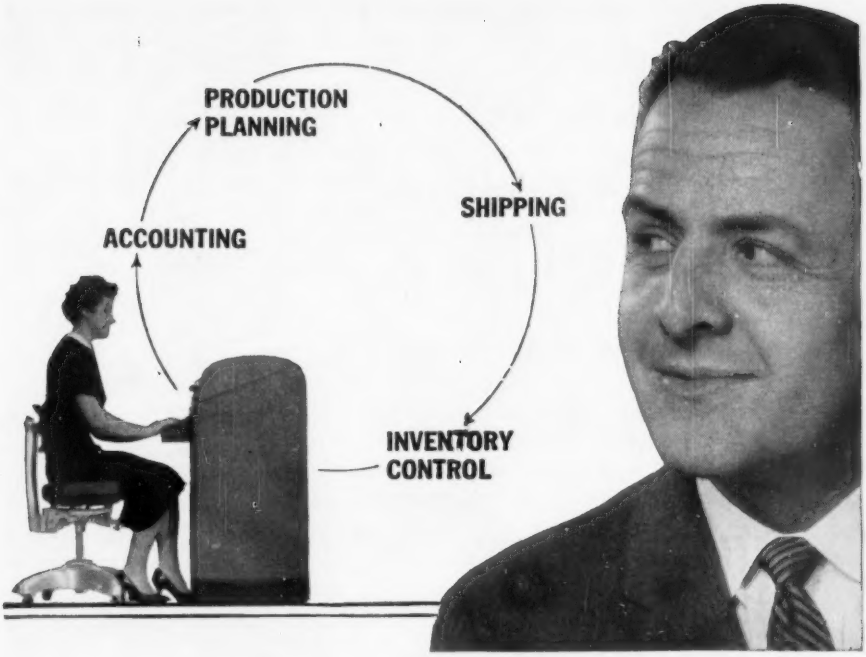
year for the next five years. Ten per cent on top of 10% will double our capacity in about seven years. When the engineers agreed on the results obtainable from this one problem, the next step was simple. We placed an order for an IBM 704. It is now fully installed.

Our computer, peripheral equipment, and most of TVA's electric accounting machine equipment is operated by TVA's computing center in the property and supply division as a service to all TVA divisions. In our geographically dispersed and highly decentralized organization, however, we do not think a completely "closed-shop" service policy practical. Moreover, we feel that the individual divisions know their problems best. In most instances, therefore, both the scientific and data processing programming will be done by the various TVA divisions. The computing center will furnish assistance in problem analysis and programming to divisions desiring this service, using programmers on the office methods staff when data processing applications are involved.

We have had no personnel problems and no widespread fear was occasioned by our acquisition of this machine. We have both white and blue collar unions. Frequent joint conferences between employee and management representatives are a part of TVA's basic philosophy of operation and, through them, all employees are kept informed of changes or contemplated plans that may affect them in any way. Under these circumstances, fear of the unknown cannot exist long in TVA. It is not likely that anyone will be terminated because of the installation of computing equipment. To some, it offers opportunities for advancement. No one will be downgraded.

Anyone seriously contemplating a computer installation should never minimize: physical installation, rent of the equipment, and programming costs. The physical installation of a computer is a major undertaking. Its cost has had too little publicity. Whether an old building is rehabilitated for the purpose, or whether a new building is constructed, the cost will run well over $100,000; perhaps as high as $200,000. Much of the cost depends upon how may frills or luxuries are added, also what arrangements must be made to relocate the offices presently occupying the space. TVA did not build a new building. We relocated the offices which had occupied the space allocated to the computing center and related activities, and rehabilitated the evacuated space to meet the special requirements of the computer installation. This included not only the space occupied by the computer itself and its peripheral equipment, but also program testing rooms, supervisors' offices, and a special room to accommodate our punched card accounting machines. We call this the tabulating services unit. This equipment had to be moved to the computing center from another TVA office building several blocks away. The combined relocation and rehabilitation costs of all these preparations ran around $132,000. A general breakdown of the cost is shown on page 121.

The rental for the equipment runs around $600,000 a year. The cost of programming, which is used here in the



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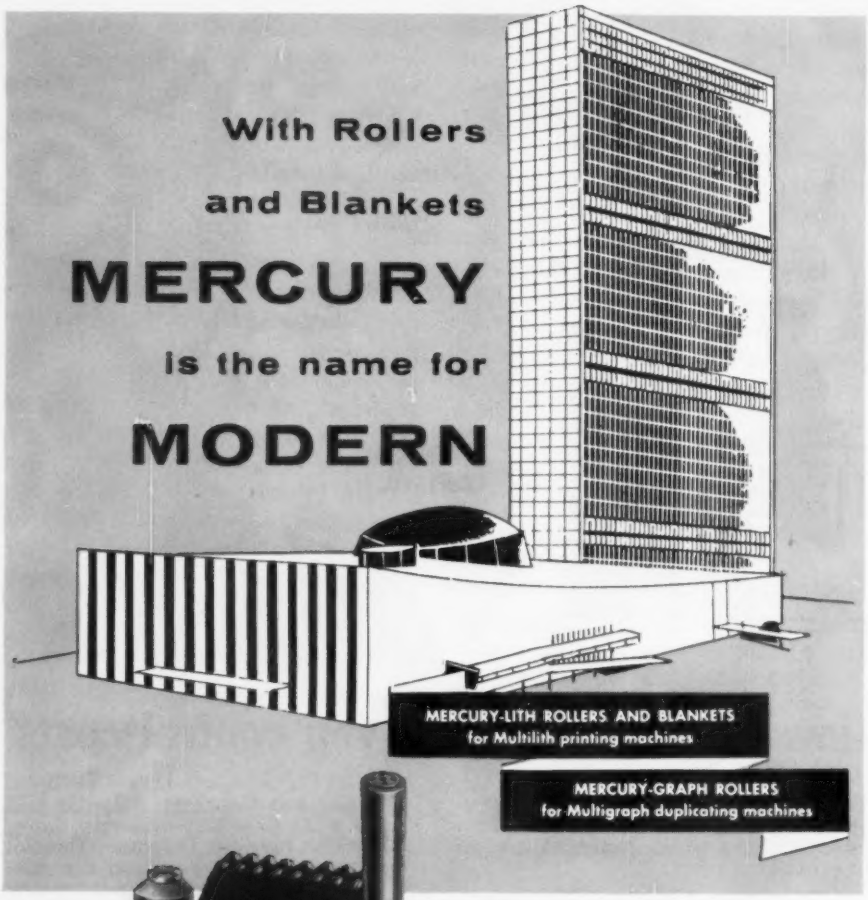

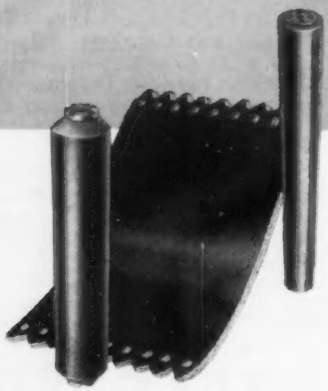

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broad sense and includes the analyses as well as the conversion to machine language, will probably run from $100,000 to $150,000 a year for the next five or more years.

From the foregoing, it should be clear that an electronic computer is more than just another bookkeeping machine or a glorified calculator. Anyone who has only this concept of computers should stick with mechanical equipment. What role will this machine play in the future of TVA? Frankly, we expect much.

The word "computer" is not a descriptive term. A computer is really the heart of an automatic system for handling all kinds of information. Its limitations, therefore, are largely those of human imagination rather than machine limitations. The savings it can effect arise from its automatic characteristics, and from its application to problems not susceptible of solution by purely mechanical equipment. Because of this, we expect to integrate it into the operation of TVA as a management tool: to control a mighty river and improve its navigability; to convert the controlled water flow into electric energy; to supplement the hydropower with all necessary steam power in a dynamic industrial area; to provide for reforestation and the proper use of marginal lands; to provide for the agricultural and industrial development of the Tennessee Valley; to provide for the national defense; and to carry out a research program to develop the maximum use of automation in these programs and in planning the future of TVA.

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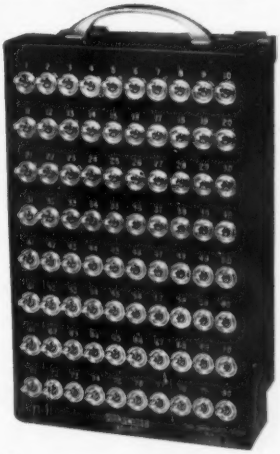

The Quikswitch 80-80 is a switchable plugboard for the IBM 514 or the 519 reproducer. It replaces the manually wired 80-80 board and provides column-for-column reproducing into blank cards or, at the flick of a switch, any desired column can be left blank or gang punched with constant data.

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Mistakes to Avoid in Planning Automatic Data Processing

WHAT BOTTLENECKS do companies run into when they install automatic data processing equipment? Why have savings, in many cases, been disappointing? Almost anyone can come up with a lot of answers that sound pretty good. The trouble is that these are often just opinions.

Not long ago, John Diebold & Associates, Inc., New York management consulting firm specializing in automatic data processing, found that failures in electronic computer data processing were due to such causes as poor cost estimates, bad systems design, incorrect estimates of computor time requirements and wasteful applications. But the underlying reason was inadequate planning which resulted from underestimating the work and management attention that a data processing program requires.

The Diebold organization set up an educational division known as Management Science Training Institute whose function was to put on seminars and training programs to help companies avoid failures in business data processing. Mr. Diebold states that registrations for the program were divided about evenly between companies with equipment installed and companies that were planning their data processing systems. In preparing these courses, a great deal of research effort was devoted to finding out what goes wrong with data processing programs. The re-

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. . . WHERE RESEARCH IS THE KEY TO TOMORROW

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sults, which represent findings from about 1000 computer installations, were confirmed by an on-the-spot survey with registrants to the courses from all over the U. S., as well as Europe. Five basic questions were asked:

How does trouble originate? Why aren't computers paying their way? Why have results been slow to materialize? What would you do? How would you avoid pitfalls?

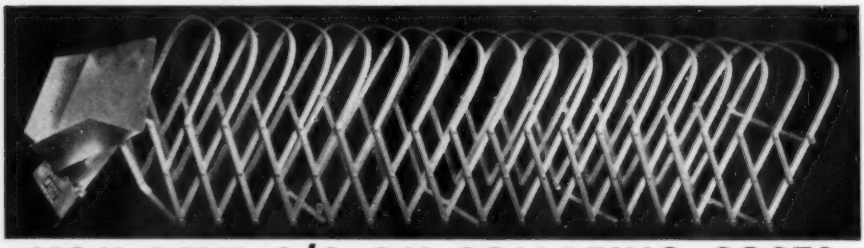
How Trouble Originates

Setting Improper Goals. Almost everyone agreed that this was the biggest source of trouble. They said that many of their original objectives were unrealistic. Also, many had failed to set costs and savings yardsticks.

Organizational Difficulties. Harmful effects on personnel who didn't understand what was going on. Failure to adapt the old organization to the system. Lack of knowledge by top management on the bare rudiments of what data processing was all about. Too much reliance placed on technicians.

Selecting Wrong Applications. Applied to operations that could be done just as well by cheaper means. Not knowing right places to apply it first. Used up processing and preparation time on problems too simple to bother with, leaving no time for really worthwhile functions.

Incomplete Analysis. Slanting the program on false foundations by accepting present procedures at face value, neglecting the exceptions. Failure to realize the systems implications of a computer. Accepting "interview" results as to methods and considering



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present system to be ideal.

Computers Weren't Profitable

Six areas are listed here, some of which overlap. They are reported in the order of their importance.

Shallow Thinking is a good way to describe the most basic reason. It includes misusing the integrated approach, compounding old problems, and providing too much information. *Inadequate System Design* and *hidden costs* (unpredicted) are part of the same thing. Basically, this was the failure to provide management thinking to a management problem.

Overemphasizing Hardware was a frequent factor. Companies started out by thinking first the machine, then the system. There is virtually 100% agreement data processing is actually a management problem, not a technical problem.

Faulty Coordination. Data processing program was set up on a fragmented basis. Companies neglected to fit details together.

Problems of Staffing and Training. Not enough care was given to selecting the proper staff to operate the equipment and, once selected, they received inadequate training.

Results Slow in Coming

Poor Systems Design headed the list

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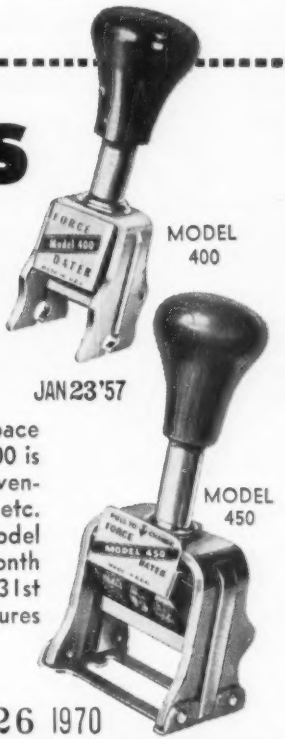

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in this area. This delayed applications and often increased machine time requirements which led to soaring costs. This occurred, mainly, through neglecting to use tested methods and routines.

Conversion Difficulties. In a significant number of organizations, there was much internal confusion at the time of conversion to data processing equipment. Many firms have lost business due to improper conversion.

What Can Be Done About It

Specify Study Areas. Find out how to reconcile the integrated systems approach with the practical problems of making a study. Determine areas oı profitability and learn costing techniques.

Learn How to Test Results of Data Gathering.

Learn How to Analyze Information for Efficiency and Effectiveness.

Learn How to Design the System.

Learn What Has to be Done Before the Computer Arrives. (Be *sure* you know, then organize to meet the schedule.)

How to Avoid Pitfalls

Most remedies came back to three areas: people, systems work and organization. Before any work is started, make sure you have the right people to do the work of systems analysis, systems design and equipment selection. These people must be trained, and they must be given sufficient time and support to do their work.

Before any equipment is ordered, be sure that accurate time estimates have

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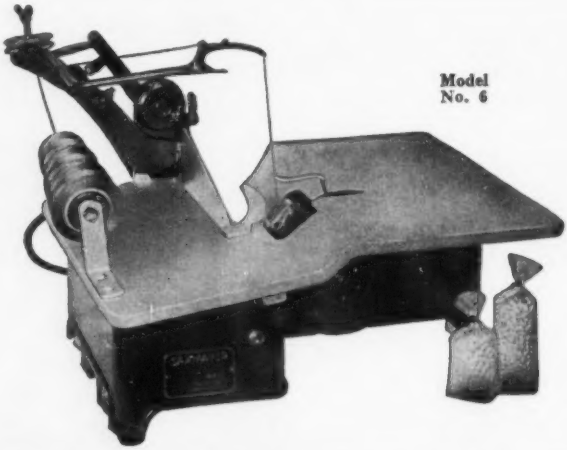

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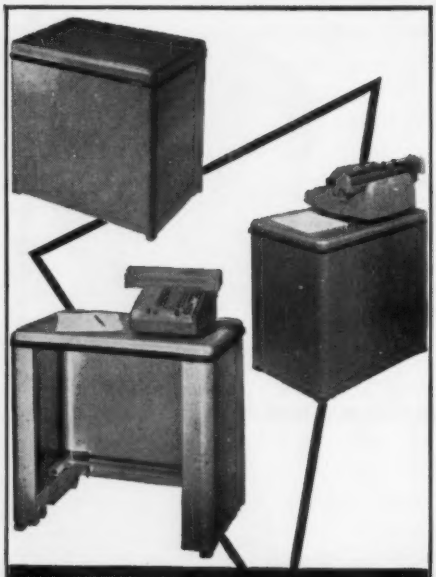

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been made, that sufficient attention has been given to *all* the planned applications (not just the first one), and that all the exceptions have been considered in designing the system. Another important factor that came out was the need to make sure that the non-computer portion of the system would be attuned to the requirements of the computer system, as far as data input and standardization are concerned.

Putting the computer to work is as difficult as planning what it will do. The main requirements are the proper organization, well trained people, and a sound plan of action. There should be a specific conversion schedule, and all the implications of the conversion procedure must be considered.

According to John Diebold, anyone planning to go into data processing can use the results of these findings as a check-list. If they do, he feels that less trouble will be encountered in realizing a successful and profitable data processing installation.

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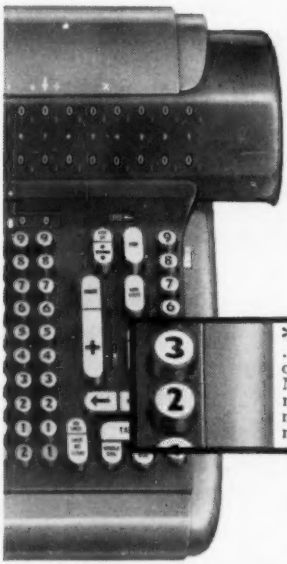

* These "live" multiplier keys . . . exclusive on the Marchant calculator . . . make possible Marchant's fast, easy *push-button* multiplication . . . automatic, simultaneous! You just touch the multiplier keys and read the answer!

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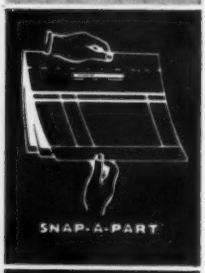

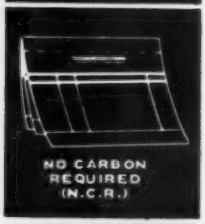

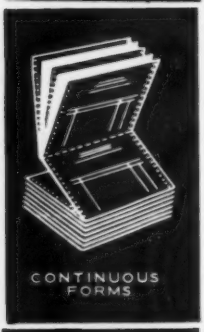

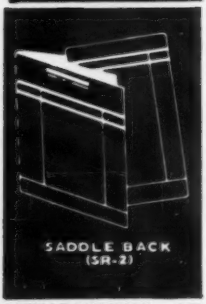

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RIGHT or WRONG in Employee Relations

A ROUNDUP of day-to-day employee problems and how they were handled by management. Each incident is taken from a true-life grievance which went to arbitration. Names of some principals have been changed.

May You Use a Test Result to Deny a Promotion?

What Happened:

When a job opened up in another department, Alice Newmark felt sure she would get the promotion because the company had a policy of promoting from within on the basis of "seniority and job requirements." But when she made formal application, the supervisor told her that she would have to take a test in arithmetic because the job called for "ability to do simple calculations."

"Do you always give a test for this job?" asked Alice.

"Yes, we do, Alice," replied the supervisor, "but you shouldn't have any trouble. You've done some temporary work in this department before."

Alice took the test, and failed. The job was given to a junior employee. Alice complained:

1. I know the work on that job. I filled in many times and made out all right.

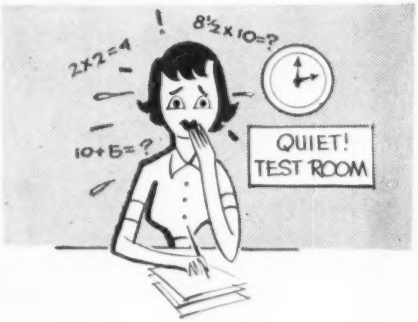
2. I want a chance to prove myself on the job. I'm entitled to a trial period.

The company sympathized with Alice's situation, but felt it couldn't change policy to fit one employee. It had always given a test for that job, and had used the results exclusively to decide who was to be promoted. No one had ever before complained about the test.

Was the Company:

RIGHT ☐ WRONG ☐

WHAT ARBITRATOR HARRY J. DWORKIN RULED: "The crux of case is whether the company had the right to deny the grievant the job solely by reason of her failure to pass an examination testing her proficiency in simple mathematics. The use of tests is properly a supplement to other per-



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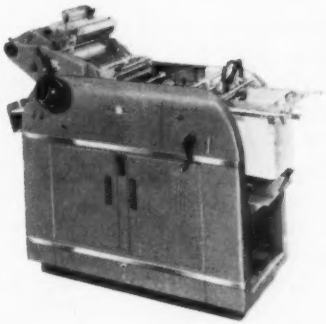

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sonnel evaluation tools and techniques. Thus, the test should not be used alone as a means for evaluating the employee unless such a condition is specifically spelled out in company policy. In this case, it is not. The policy of the company does not include "ability to pass a test" as a requirement, but merely "seniority and requirements for the job." The employee should be given a trial in the job—particularly where the company is safeguarded through a probationary period. Also, if the employee doesn't make the grade on the job, the test results will be strong evidence in favor of the company's judgment. Alice Newmark should be promoted on a trial basis."

Can You Require Employees to Meet Standards?

What Happened:

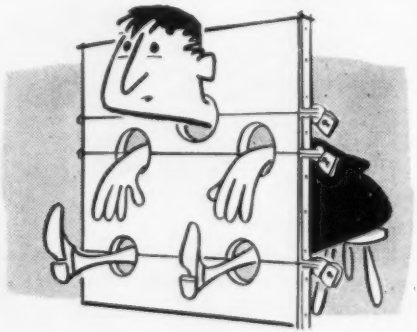
One morning Sam Hersh received a warning notice. It read, in part: "You have worked at 42% efficiency of the average established by other employees over a three-month period. This is being issued as a warning that your production rate will have to be increased, or more drastic action will be taken."

Sam stormed into his supervisor's office and complained bitterly:

1. I've worked here three years, and no other employee has ever gotten a warning like this.

2. How do you know I'm 42% of average? You have no written standards of performance in this department.

The supervisor answered: "That's right. We have no set minimum standards, but we've compared your output in the last three months with others. I think 42% below average is pretty poor work by any standard. I'm sorry, but unless you improve soon, we'll have to let you go."



Sam was not satisfied. He took his case to arbitration on the following grounds:

1. A company cannot establish efficiency standards all of a sudden.

2. I've been turning out the same work for over six months. Why did the company wait so long? They must have it "in for me."

3. I want that warning notice recinded.

Answered the company:

1. We have a right to set efficiency standards any time we please. That's a management function.

2. The fact that we didn't warn you before may have been a mistake. But we mean business now. Improve your work or out you go.

Was the Company:

RIGHT ☐ WRONG ☐

WHAT ARBITRATOR PHILIP NEFF

RULED: "The company has obligations to the owners and the employees to conduct its affairs so that it can compete successfully in markets, yield profits, pay competitive wages and offer steady employment to its employees. It could not meet these obligations if it did not measure performance and require all employees to meet some minimum standards. Management authority would be meaningless unless it had the right at any time to judge efficiency and require all employees to meet a reasonable level. Sam Hersh did not meet a reasonable level and therefore deserved the warning notice."

May a Worker Criticize His Supervisor?

What Happened:

Ralph Taft was the best worker in the department. He knew his job and, what's more, he had 20 years' service. But Ralph didn't think much of his immediate boss. So in the restroom, and even on the job itself, Ralph criticized his superior. The supervisor got wind of Ralph's none-too-fond opinion, and the two men had a good talk. Ralph agreed to curb his tongue. But he didn't do so—and he was laid off. Ralph protested and, when his grievance came before an arbitrator, his contention was:

1. Sure I criticized my supervisor, but I was exercising my right of free speech. People criticize the President of the United States every day, but they don't get disciplined.

2. A disciplinary layoff should be for poor work. Look at my record—the best in the department. I want the two weeks' pay I have lost.

The company had something to say about all this:

1. A company is a place for work—not speechmaking.

2. Ralph's criticism of his supervisor created bad morale in the department, and lowered the status of the boss.

3. Ralph was guilty of insubordination and deserved even more than he got. We were too lenient with him. He should have been fired.

Was the Company:

RIGHT ☐ **WRONG** ☐

WHAT ARBITRATOR MYLES S. BOOTHE RULED: "Freedom of speech and expression are reserved as the right of every individual by our way of life in a democracy. These cannot be denied. However, where improper conversation regarding supervision and the company occurs on the job, this is tantamount to insubordination, and a remedy is justified. The company's action is sustained."

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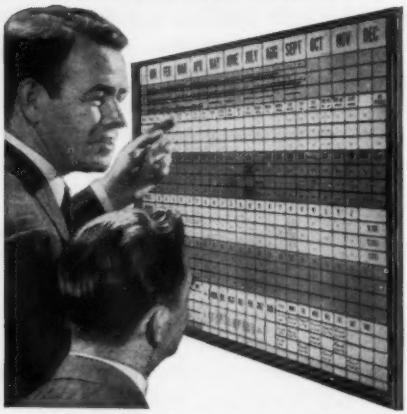

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For More Information Circle No. 316

The Retirement Party

(Continued from page 29)

event, bewilderingly asking, "Now who is that?"

No explanation is necessary for the fourth category, the friends of the retiree, most of whom don't even want to attend, but do so out of compunction. Included is the boss who doesn't relish giving a speechful of lies. Standing by, with remarkably feigned indifference, are two or three aspirants for the vacant job. The rest of the office force are of mixed emotions, most of them wondering where the money came from to buy the gift.

So, as the last of lukewarm coffee is poured and we toast our retiree at His Party:

Here's to the man of sixty-five
Who spurns all etiquette,
Confronts a so-called "friend" to say:
"I don't believe we've met!"

"Just sign it 'dissatisfied,' Jones, then get outside and help with the mail."

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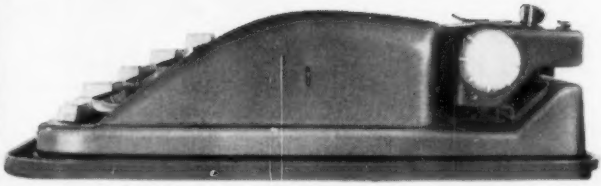

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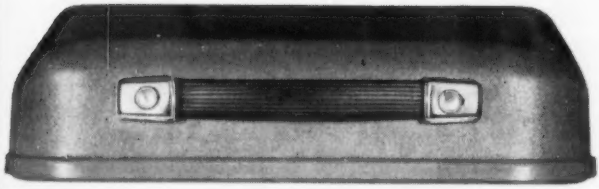

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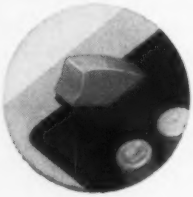

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The Reports Problem

LESLIE H. MATTHIES
Section Chief,
Engineering Administrative Services,
Hallamore Electronics,
Anaheim, Calif.

DURING THE LAST WAR a disabled British army captain returned home to London where they placed him in charge of a guard company at one of the royal palaces. Accompanied by his sergeant, he was making his first tour of the various guard stations. As they walked down the long hall, they came upon a guard standing rigidly at attention before a huge door.

"Soldier, why are you guarding this door?" asked the captain.

Still stiffly at attention, the guard replied, "I don't know, sir."

The captain looked inquiringly at his sergeant, who said, "I don't know why either, sir. It's on the duty list."

When they returned to the guard office the captain told the sergeant to dig through the records and find out why a guard was posted at that particular door and not at any of the others. After hours of searching they found the answer. Four years ago that room had been painted. The officer-in-charge had ordered a guard posted to prevent people from entering until the paint had dried.

Laugh, but how many useless guards are now on duty in your organization? How many reports are your people preparing; reports that you don't use?

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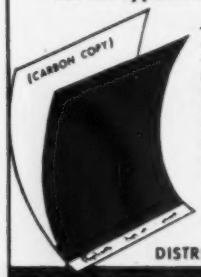

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The chances are that you spend about three times as much money as you should on your reports. At the same time you are probably getting less than 25% of the value out of them that you should.

Routine systems reports that tell what is happening from day to day are probably the most neglected field of systems work. Studies in this area show that the picture is as bad as we have painted it—or worse. The reason is simple: no one is *responsible* for reports, anyone can make one, and no one gives any time or attention to improving them.

Yet, reports are essential to a good operation. We must have them. People are going to ask for them, and other people are going to make reports. Reports are essential tools. The problem lies in our own negligence. We don't assign the *responsibility for control* of reports to anyone.

A good reports control program can save thousands of dollars if it is in the hands of people who know what they are doing. Usually you find this know-how in capable systems and procedures groups. A good reports program can entirely change the present sad picture. A properly designed reports system can tone up the entire organization.

The condition of the total reports group is usually so bad that the contrast will be tremendous when you have finished your study and set up your control. An effective reports plan will place all members of your organization on their toes. Men at the lowest level of authority will try to correct troubles in their own domain immediately.

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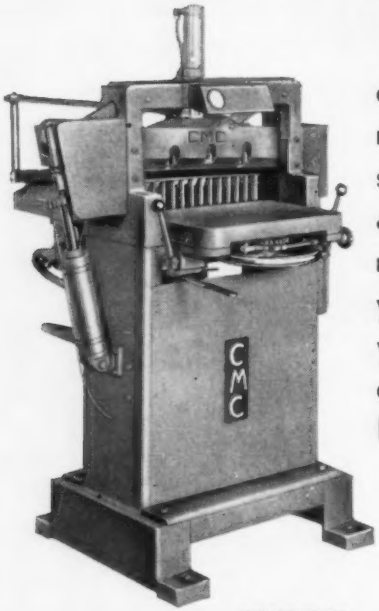

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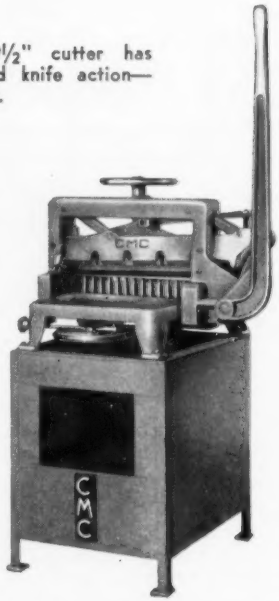

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For More Information Circle No. 262

ordinate executives. When the glare of performance publicity is apt to sweep over them any time, they must take responsibility, use authority and get results. With a fast moving, effective reports control program, all management people, from top to bottom, will know what is going on in routine matters. They will then have time for thinking and planning.

The word "report" is a loosely used term. Often a printed form will have the word "report" in its title. Yet it may do no reporting at all. In systems, *a report summarizes a group of information which goes to an executive, to someone who has the authority to redirect action, if the report indicates that action is not going according to plan.*

In electrical work, there is a term that applies well to a good systems report: *feedback*. This describes the function of the report. Feedback means that a sample of the output of the system is fed back to the thinking device for comparison, and for correction.

For example, a common thinking device is the thermostat connected to a furnace. If you set the thermostat at 72° it will permit a variance of perhaps 2° either way: a range from 70° to 74°. If the temperature hits 74°, the thermostat will shut off the heat. If the temperature drops to 70°, the

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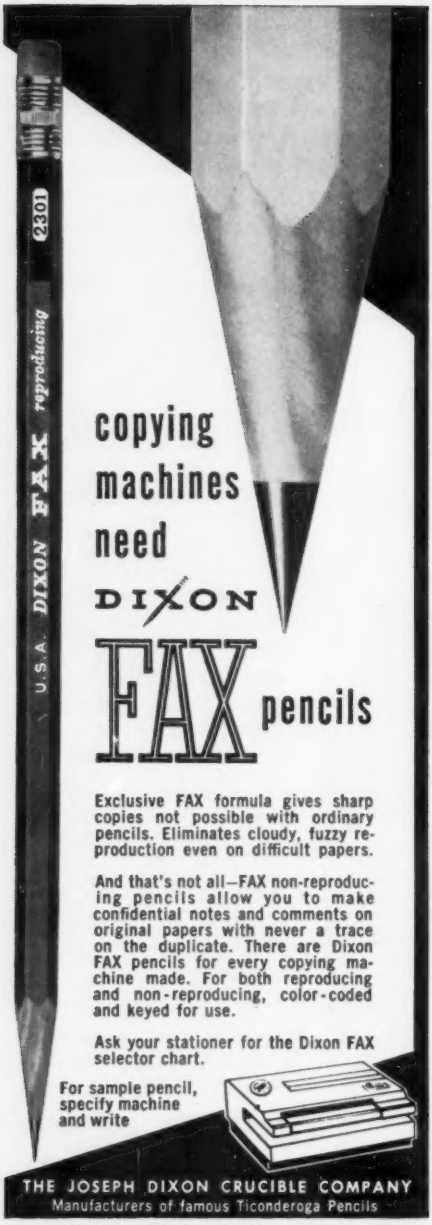
For More Information Circle No. 279



Dept. 00-11, JERSEY CITY 3, NEW JERSEY
Dixon Pencil Co., Ltd., Newmarket, Canada
For More Information Circle No. 301

thermostat will turn on the heat. This is a common, but effective, variety of automation. Some of the heat in the room becomes a feedback or report to the "supervisor." A sample of the heat in the room reaches the thermostat, which acts as a supervisor. If the sample that the thermostat feels is too warm, it redirects action. It shuts off the fuel to the furnace. If it feels an air sample that is too cool it turns on the furnace and increases the amount of heat.

Notice this action:

1. A sample (or summary) goes to the supervisor.
2. The supervisor compares the sample to the plan.
3. If the sample is out of tolerance, the supervisor redirects the action. Less heat, or more heat.
4. The supervisor is constantly on the alert to keep things in balance.
5. The plan can be changed. If your aged aunt comes to visit you, she needs more heat. You move the thermostat up to 76°.

Feedback in the sample can fool the thermostat. If you held a match in front of it, even though you had a cool room, the thermostat would "think" the air was too hot and shut off the heat. Or, you could place an ice-pack

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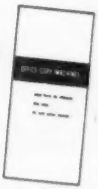

DRI-STAT DIVISION
Peerless Photo Products, Inc. O-11
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For More Information Circle No. 231

Essentials of a Good Report

1. **TITLE or SUBJECT—a clear statement of what is being reported.**
2. **TIMELINESS—date of report and period covered should not be more than a day or two apart.**
3. **THE PERIOD COVERED.**
4. **PERFORMANCE COMPARISON—actual vs. planned.**
5. **DIFFERENCE—how much in or out of tolerence?**
6. **RECOMMENDATION or INDICATED ACTION.**

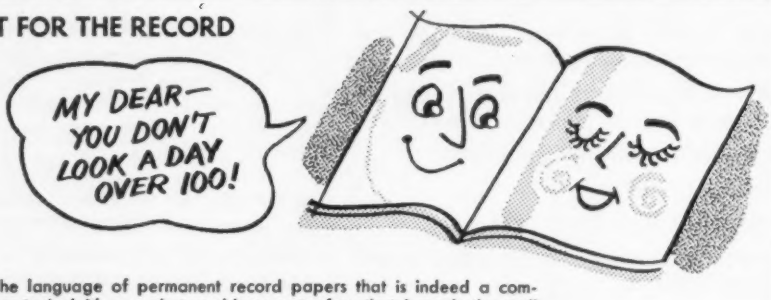
around the thermostat in a very hot room. The thermostat would pump in more heat because the sample, that you allowed it to have, confused it.

Feedback must be accurate, whether it goes to a machine or to a supervisor. If the sample or summary is not accurate, both the man and the machine will make a wrong decision. Then things will get worse, not better.

In this respect most reports are *weak*. Some of them are *inaccurate*. Some of them are *unintelligible*. Some of them are *confusing*. Some of them are *misleading*. Others are old and tired. By the time they reach the supervisor the action, good or bad, has long since been completed. The feedback then is of no value.

Consider the supervisor who receives a report that says, "We now have 37 units of scanty-wags at station five." Very interesing but, so what? Unless you have a plan, you don't know whether 37 units at station five is good, bad, or satisfactory. If the *plan* was to have 50 units there, then you know

JUST FOR THE RECORD



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Flexible white cotton fibers, crafted by skilled hands and modern machines, create papers that for generations have been recognized for beauty, strength and permanence. Make sure the papers you use are made with cotton fiber—25% minimum up to 100% in the finest grades . . . in stocks and bonds, business and social stationery, onion skin, index, ledger, drawing, tracing and blueprint papers.

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For More Information Circle No. 291

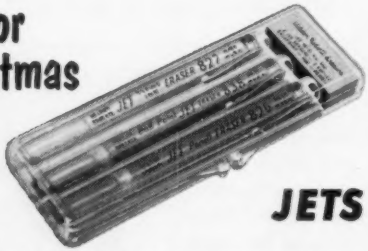
where you stand. Not good. You are 13 units shy. The boss can redirect the action at once. He can *take steps to get the number of units up to where they should be,* before there is more trouble down the line. Yet 90% of the reports now floating through an organization, that has never had a reports control program, don't answer this one simple question: what is the plan and how does performance stack up against the plan?

The systems report is a recurring thing. It is a feedback that constantly reaches and informs the executive so that he can redirect action if redirection is needed.

We do use another type of report, in systems work, which is non-recurring. We call it the *project report.* For example, a report made after a systems survey is a project report. You make it only once. You prepare it only on special assignment. Other project reports are: Should the company prepare for an electronic computer program? How much will a new site for a plant cost? We bring this up because the word *report* is used very loosely in administrative circles. Loose usage can be

(Continued on page 254)

for Christmas



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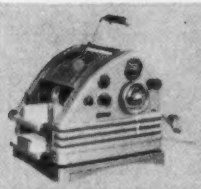

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For More Information Circle No. 379

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You and your associates should know the unique and fabulous story of GBC Plastic and Loose-Leaf Binding for the office. Here are the facts . . . how the GBC Modern Binding System is completely revolutionizing office binding methods throughout the world . . . at substantial savings in cost and time.

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For More Information Circle No. 427

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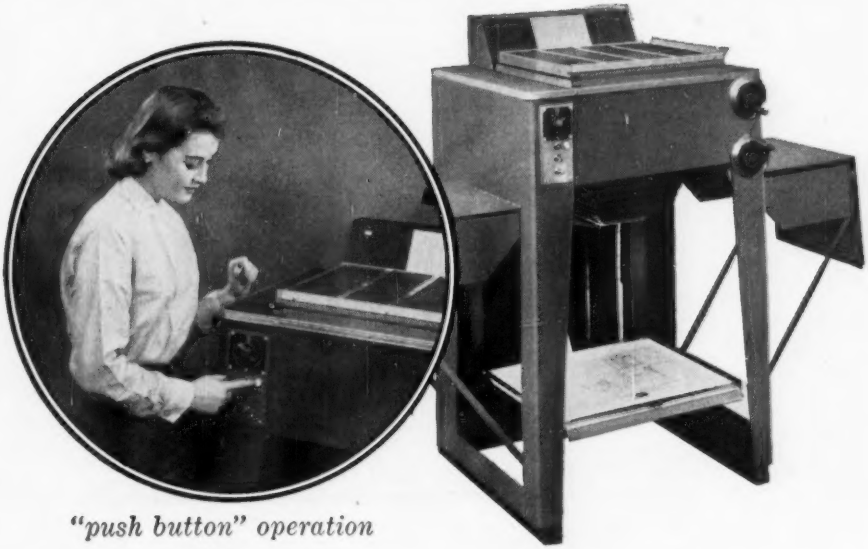
MAKE YOUR OWN NEGATIVES



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You can save 50% to 70% on the cost of line and halftone negatives—and speed up production 5 to 50 times — by putting even complex jobs on press in a matter of minutes. Compact Kenro "Vertical 18" has simplified controls, automatic features which make it easy for anyone to use.

Handles up to 14″ x 18″ negatives. In practical form sizes equals a 16 x 20 camera, has twice the capacity of 11 x 14, more usefulness than 14 x 17. Finest Goerz lens assures sharp, high quality results. $1250 complete with lens and lights ready to use.

Write for Bulletin 56 which gives full details, all applications and shows exactly how a Kenro "Vertical 18" can improve your duplicating procedure. Available from dealers everywhere.

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KENRO "vertical 18" CAMERA

For More Information Circle No. 217

TOTALIA

Lagomarsino F. A. I. manufacturers of Totalia hand and electric adding listing machines, Totalia printing calculators, Numeria hand and electric calculators, proudly present their latest model: **the new electric adding listing machine with fully automatic memory both of the addenda and the total**

For More Information
Circle No. 196

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New efficiency for every office . . .

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PRESENTING THE

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AUTOMATIC

MAIL OPENER

$174.50

Plus Federal Excise Tax

ELECTRICALLY OPENS UP TO

600 LETTERS PER MINUTE

Opens envelopes of any size or thickness • Adjustable trim cut • Will not damage contents • Completely safe — automatic shut-off • Letters and trim strips neatly stacked in separate removable trays • Compact; simple to use.

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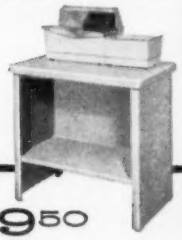

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For More Information Circle No. 229

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We are proud that the superior quality of our products has earned us the friendship of so many fine firms, and we take extra pride in meeting their special requirements with care and promptness.

We at Colonial will be happy to discuss *your* special requirements ... may we hear from you?

Specialists in the manufacture of spirit master units, spirit carbon, hand cleansers and fluids.

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NO LOST TIME

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The world's finest completely automatic electric pencil sharpener eliminates the time-consuming job of cranking outmoded hand-type sharpeners. Just insert any size wooden pencil and instantly the Electro-Pointer gives you a perfect point.

PERFECT POINT *INSTANTLY* EVERY TIME

At your stationers or write:

PROVEN FOR OVER 14 YEARS

STILE-CRAFT MANUFACTURERS, INC.
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For More Information Circle No. 237

← For More Information Circle No. 195

New Products

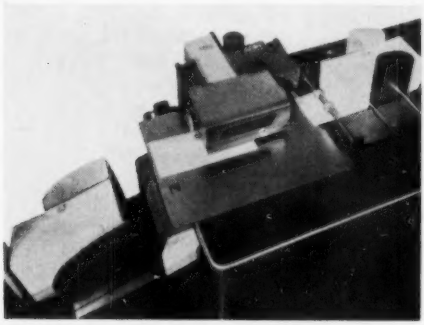
ELECTRONIC DATA SYSTEM

Computer Div., Bendix Aviation Corp., 5630 Arbor Vitae St., Los Angeles 45, Calif., has developed the CA-2 accessory for its low-priced G-15 digital computer for punched card data processing. The complete system consists of a G-15, the CA-2, conventional card readers and punches plus a tabulator and leases for about $2500 a month. This will enable smaller businesses, as well as present users of computing equipment, to obtain a compact, low-priced punched card computing system with the same performance and versatility as medium priced computing systems. The G-15 unit can process standard cards punched with numeric, alphabetic or special character information. Power requirements are one-third less and the equipment installation area is about one-half. It can be installed in an average size office without any special construction. Deliveries are scheduled to start early in 1959. The G-15, normally supplied with punched paper tape equipment and an electric typewriter as standard equipment, also has a wide range of other accessories including magnetic tape storage units. The CA-2 greatly increases the versatility and speed of input and output by permitting standard 80-column cards to be read or punched at 100 cards per minute, or data to be printed at 100 lines per minute. A full 80 columns of numeric, alphabetic or special character data may be read or punched by conventional summary punches. Output may be printed by a conventional tabulator. Two or three card units and a tabulator may be connected simultaneously to the CA-2. Computation can proceed during input or output for maximum speed in overall operations. Using the G-15, information can be tabulated, punched on cards, or read from cards automatically, under control of the computer. **For More Information Circle No. 108.**

ADDRESSING MACHINE

Scriptomatic, Inc., 306 North 11th St., Philadelphia 7, Pa., makes the Scriptomatic Model 10 Addressing Machine which addresses from master cards as fast as material can be fed to it. Insertion of hand fed material sets in motion all functions including automatic master card feeding, ejection and stacking of addressed material. There are no levers or foot pedals. An automatic feeder can be added to handle material from 3″ x 5″ to 11″ x 14″. The low cost master cards may be punched cards or other card records. A hand impression of the master can be taken anytime at the file, and 120 Scriptomatic masters can be filed per inch. The Model 10's feed hopper

holds 600 master cards. Machine is 30" high, 20" wide, 41" long; oilless bushings throughout. Operator can hand feed 2000-2500 per hour. Automatic feeder does

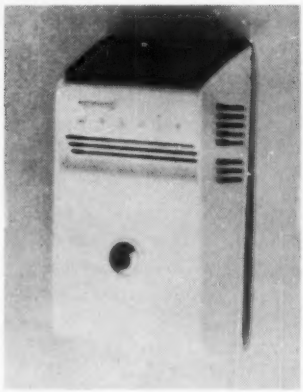


3500-4000 an hour. Five-digit counter registers impressions. Masters are written on a typewriter and print by the spirit process. **For More Information Circle No. 150.**

INDOOR ODOR CONTROL

Airkem, Inc., 241 East 44th St., New York 17, N. Y., announces Solidaire, a solid form of Airkem's odor counteractants, for packaged air conditioning systems and for restricted areas where no air conditioners are available. Additional equipment for large central systems and large non-air conditioned areas is under development. Airkem Sentinel dispensing equipment, for packaged air conditioner units, consists of two sections. The inner

unit of anodized aluminum is 15¾" x 9⅓" x 4½". The outer cover is 16½" x 9⅜" x 5½". The Sentinel is fastened to the air conditioner so that vapors from the evaporation chamber are drawn into the air conditioning air stream. This permits gradual feeding of fresh solid odor counteractant into the chamber as the charge in the evaporation chamber is exhausted. Other than physical connection to the air conditioner, the unit has no electrical or power requirements. It is completely self-contained, and virtually indestructible. The Sentinel has a capacity of eight Solidaire pieces, sufficient for air conditioners up to five tons. For greater capacities, additional units are used. For smaller offices and rest-

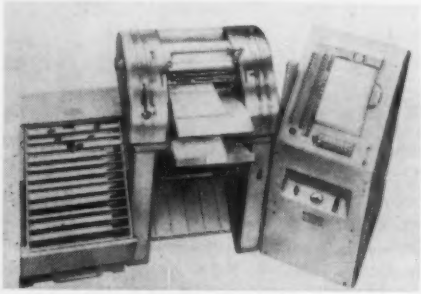


rooms, Solidaire is circulated by the Airkem Guardian, a handsome, unobstrusive unit. It is self-contained, requires no mechanical or electrical connections. Made of high-impact polystyrene, the Guardian operates on the same drop-loading principle as the Sentinel, but on a much smaller scale. The tamper-proof unit has an indicator which shows when service for refilling is required. Available in ivory or gray finishes. Both units dispense Solidaire, the solid gel form of Airkem odor counteractants which act on the principle that certain odors are mutually antagonistic and will cancel each other out. By combining many odor canceling pairs, Solidaire is effective in controling odorous conditions generally found indoors. In addition, Solidaire contains ingredients which add a freshened

effect to the air. As a result, the indoor air retains the characteristics associated with outdoor air. **For More Information Circle No. 147.**

SELECTIVE DUPLICATOR

Copy-Craft, Inc., Dept. F-11, 105 Chambers St., New York 7, N. Y., announces the Ormig Electronic Selective Data Printer which allows selectively printing any number of lines or combination of lines from a master. Designed for such procedures as handling back-orders, production control, order-invoicing, sales analysis, breakdown of lists, etc. Control board has



a push-button for each line on the master and a series of buttons to select headings. Items may be chosen from any location on the master, in any combination or quantity. When a button is pushed, an indicator light alongside each chosen line confirms operator's selections. Selected lines can be condensed or shifted as desired. Flicking a switch provides reproduction of entire master. No masks, blockouts, strip masters or shingled forms are needed. **For More Information Circle No. 116.**

READING MACHINE

Intelligent Machines Research Corp., 7019 Edsall Road, Alexandria, Va., has developed the Eye, a reading machine for cash accounting; and Selfchek, a common language which can be read by humans and the machine. The Eye machine reads typed cashier stubs and punches cash application cards in cash accounting for utilities and other businesses, at the rate of 100 a minute. Selfchek characters can be typed by conventional machines fitted with the special type face. The numerals appear normal to the human eye, except for slightly squared-off characteristics. Conventional symbols are used to call attention to unusual credit conditions, previous overpayments or underpayments by customers, and other special situations. Imperfectly printed numerals can be rejected by the machine for later checking, the Eye stacking rejected stubs in a special pocket. Stubs whose amounts have been lined out with a pen or pencil by a human operator, to indicate that they were not paid as billed, are also automatically rejected by the machine. The Eye also senses outdated stubs by checking a billing cycle number on the stubs and calling attention to out-dated ones by putting a special punch in the cash card. The machine's character sensing system utilizes a scanner which converts images into video signals, which are interpreted by a small digital computer and stored in its memory. When the complete message is read, the number is punched. Other machines are made to sort mail, read printed records made by gasoline credit cards, and perform other reading jobs. **For More Information Circle No. 157.**

PRINTING CALCULATOR

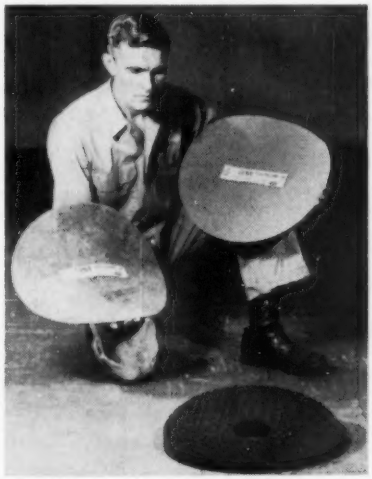
Addo-x, Inc., 300 Park Ave., New York 22, N. Y., announces the Addo-x Model 3541E which automatically performs multiplication. The operator has only to set up the multiplicand and the multiplier on the

keyboard. When the total key is depressed, the result is obtained instantly. Multiplicand, multiplier and product appear clearly printed on the tape. Machine also has automatic subtract-multiplication and decimal point indicator which is easily set in any of nine different positions. An accumulating register automatically adds and subtracts all totals and gives the grand total upon depression of the grand total key.

This saves separate calculations. The Model 3541E is especially adapted for invoice checking, calculation of deductions, discounts and percentages in general, calculation of areas, currency conversions, interest, duty and tax computations. Multiplication is extremely fast due to its automatic short-cut operation when multiplying by figures higher than four. Combines two machines in one: an efficient calculator machine and a duplex adding machine with all the features of the standard Addo-x Step-o-matic models. **For More Information Circle No. 117.**

FLOOR MAINTENANCE

Minnesota Mining & Mfg. Co., 900 Bush St., St. Paul 6, Minn., offers a floor maintenance method which reduces time-per-job in wax stripping and dry buffing, without conventional cleaning materials. It uses 3M Floor Scouring pads and 3M Floor Polishing pads for various floor surfaces, including resilient tile, linoleum, terrazo, marble, ceramic, cork and wood. The scouring pad cuts wax stripping time by one-third without shredding, and has a life comparable to or greater than present cleaning pads when used under the same conditions, the company said. Even floors that are especially dirty usually can be cleaned with one pass using this scouring pad and cold soap solution. The polishing pad is effective when used dry for buffing newly waxed or lightly marred floors; or it can be used damp with a mild soap solution for light cleaning followed by reapplication of wax. Because they are made of nylon web, the pads can neither rust nor conduct electricity, and they resist shredding since there are no loose fibers or filaments to catch in floor plates or on rough



cove bases. Splashing is eliminated because the scrubbing solution is held under the pad and on the floor. Optimum machine balance is assured by controlled, uniform thickness. A 3M Driving pad is made of molded rubber with cleats which grip the pads and prevent them from walking out from under the machine. This is adaptable to all floor polishing and scrubbing machines. The 3M Floor Maintenance system, using the two color-coded pads for easy identification, accomplishes the same work

done by scrubbing brushes and several grades of steel wool. The scouring pad is black; the polishing pad is tan. Both pads can be washed in water, wrung out and reused. Original shape is retained. A building maintenance firm which has used the new system for several months estimates a 20% overall savings in time. In one instance a 3M Floor Scouring pad stripped 23,000 sq. ft. in 68 manhours, a job which would have taken 100 hours using older methods, according to the firm's personnel. Advantages listed by other users include ease of motion, and relief from strong soaps or harsh cleaners on especially dirty areas. **For More Information Circle No. 141.**

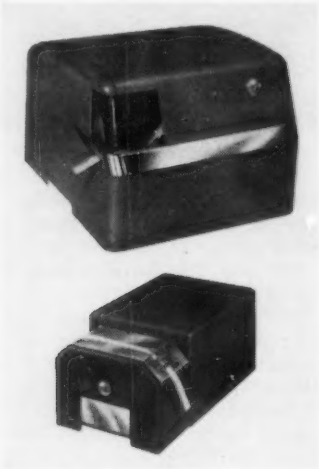
ROTARY FILES

Wright Line, Inc., 160 Gold Star Blvd., Worcester 6, Mass., makes Wright Rotary Files in more than 30 models for varying capacities and all card sizes. They are produced in four work-station styles: Console I, Console II, Model 40 and Model 60.

The large capacity Models 40 and 60 are low, modern design files, finished in vinyl covered steel that will not scratch, with stainless steel trim on all wearing surfaces. A wide, sturdy plastic laminate posting shelf provides convenient working area with centrally located controls. Foot controls are also available with a selector switch control at operator's right. For operator's protection, Models 40 and 60 have an electronic safety beam which immediately stops the machine if any object crosses its path. No resetting is necessary. The cut-back lower front panel gives operator adequate knee space for comfort. The smaller Console models are also complete work stations. A posting desk may be added to either unit or two Consoles may be joined together with a posting desk for double filing capacity. Conveniently located forward-reverse controls are at the operator's fingertips. The Roll-Wright cover on all Console models keeps out dust and dirt and it has a lock for security. For illustrated catalog, **Circle No. 122.**

TAPE PUNCH & READER

Teletype Corp., Dept. 30 L, 4100 Fullerton Ave., Chicago 39, Ill., announces the Teletype Model 28 Tape Punch and Tape Reader which feature 100 wpm operation. The punch receives incoming sequential



signals and translates them into perforated code combinations in tape. It also types the corresponding characters on the tape, and provides for parallel-wire output of incoming signals for control of external equipment. The Model 28 Punch is 9½″ high, 13″ wide and 14⅛″ deep. The Tape Reader translates code of perforated tape

into electrical impulses for sequential transmission, or translates code of perforated tape into electrical impulses for parallel-wire transmission. It can receive electrical impulses from external parallel-wire source and convert the impulses for sequential transmission. The Tape Reader is 6½" high, 9" wide and 16" deep. Both units are available in gray-green wrinkle and other attractive finishes. **For More Information Circle No. 144.**

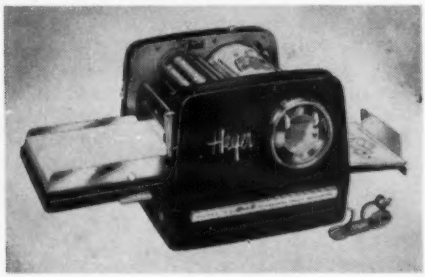
PORTABLE TYPEWRITER

Royal McBee Corp., Port Chester, N. Y., makes the Futura Portable Typewriter, with all the practical convenience features of a standard office typewriter. The linear styling of the Futura is the creation of industrial designer Laird Covey and Royal McBee research and development division designers. The low, completely enclosed

typewriter is accented by a two-tone color scheme conceived by color authority Faber Birren. Available in four color combinations: gray with cocoa brown, meadow green, periwinkle blue, or mist gray. The Magic Column Set provides the same method of automatic tabulation from the keyboard as the standard typewriter. The 44-character keyboard is fully standard, with the same slope and deep, finger-curved keys as the office machine. An acceleration factor in the type bars gives sharper impressions, eliminates type bar clashes and gives the Futura light, fast action. Other features include Royal's Twin Pak ten-second ribbon change; automatic Magic Margins; Line Meter to indicate distance from the bottom of the page; and low, solid, unitized construction which firmly hugs the desk or typing surface. A tapered carrying case comes in simulated cowhide. The case is scuff-proof, and its brass trim is permanently lacquered. A matching luggage tag is affixed to the case. A protective dust cover is provided with each typewriter. A new method of packing typewriters for shipment is being inaugurated by Royal McBee. Two polystyrene safety cushions hold the Futura snugly in place in its case during shipment. Shocks in shipping are absorbed instead of causing damage. **For More Information Circle No. 130.**

SPIRIT DUPLICATORS

Heyer Corp., 1821 S. Kostner Ave., Chicago 23, Ill., announces its line of Mark III Conqueror Spirit Duplicators featuring four engineering advancements, at no increase in prices, to make duplicating easier and practically foolproof for anyone, according to the manufacturer.

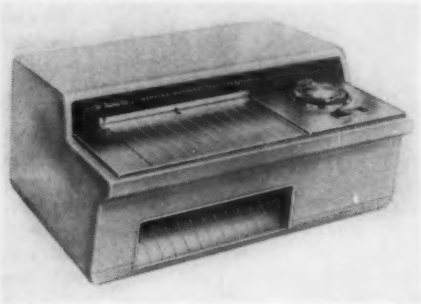


The feed table has stripper figures which permit only one sheet of paper to be fed at a time. This allows automatic feeding of thin papers to postcard weights without adjustment of rubber gripper pads. Adjustable feed wheels are easily moved to contact the edges of the paper. They provide even, non-skip feeding down to the last sheet and keep lint from forming in the copy area to assure delivery of clear, crisp copies. A feed tension control compensates for various weights of paper and card stock. The operator simply turns the dial to light, medium, heavy or inter-

mediate settings, according to the weight of stock being fed. Readjustments of the feed tension can be made while machine is in operation. The counter on the Mark III's has been improved. It has a positive, direct gear drive that gives accurate, trouble-free counting of impressions. It provides top visibility and is easy to reset. Duplicators have nylon gears that are silent, need no lubrication and wear longer. The drive works only in a forward motion and, according to the manufacturer, does away with reciprocal action to eliminate lurch that causes uneven printing. Two electric machines in the Mark III line are Model 76A at $299.50 plus tax; and Model 76B with 11″ and 14″ cylinder stop selector, at $324.50 plus tax. The cylinder stop selector is an advantage if 11″ and 14″ masters are used interchangeably. Both electric Conquerors have automatic start-stop. A press of the motor bar starts motor and machine simultaneously; after last sheet is fed, motor stops automatically. A hand-operated Model 70 Mark III Conqueror, with all the features of the electric models except electric drive, is priced at $214.50 plus tax. All produce 300 to 400 copies of anything written, typed, drawn, ruled or traced on a spirit master, in as many as five colors at once, at 110 copies a minute. All accommodate stock from 3″ x 5″ to 9″ x 14″. **For More Information Circle No. 102.**

COPYING MACHINE

Minnesota Mining & Mfg. Co., Dept. ES-118, St. Paul 6, Minn., has restyled the Secretary copying machine, which makes completely dry copies of documents in less than four seconds, and added a heavy-weight copy paper. The machine is a continuation of the previous styling which won an Industrial Designers Institute award earlier this year. The cabinet is buff and blue with aluminum trim. Called Type 30 Thermo-Fax copy paper, this bond weight paper is durable and stiff to resist tearing and rough handling. The paper can be used in all Thermo-Fax copying machines. **For More Information Circle No. 158.**



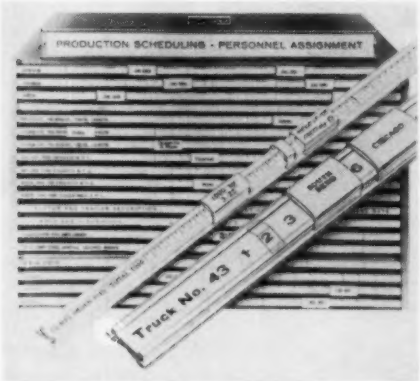
BALLPEN

Koh-I-Noor, Bloomsbury, N. J., makes a four-color ballpoint pen designed as a luxury gift item. This Koh-I-Noor Versicolor retails for $6.75, in an attractive individual box. The barrel has an attractive chrome finish with engraved panels of vertical grooves alternating with panels of cross-hatching. Colored push-buttons denote red, blue, green, and black. When one color is being used, all that need be done to replace it is to push out the other desired color. This automatically retracts the one in use. **For More Information Circle No. 137.**

CONTROL BOARDS

Acme Visible Records, Inc., Crozet, Va., announces a line of control boards with all visible parts of clear transparent plastic. These interlocking moldings hold the printed or marked colored paper strips. Two kinds of signals can be used, one sliding underneath the other. Lengths of signals can be varied as desired. Any number of signals can be accommodated by

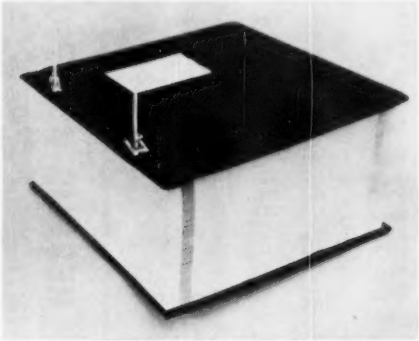
one molding for signaling by color, position and legend. A board can be assembled with 25, 50 or 100 parallel moldings in standard widths of 17", 30" and 40". The



extreme flexibility of the design provides for use by small and large organizations for simple or intricate scheduling with several variables. **For More Information Circle No. 113.**

TABULATING FORMS BINDERS

National Blank Book Co., Dept. 810, Holyoke, Mass., makes a line of binders to house bursted or unbursted multiple punched forms for reports produced by



tabulating departments from punched cards or tape. Black plastic covers with tough nylon posts which bend, or pressboard covers with metal posts, both have the Clip It mechanism. There is also a post bar binder, with Press-to-Lock mechanism and black plastic covers, which holds a large amount of material in a sandwich fashion with no posts protruding above the covers. **For More Information Circle No. 133.**

COLLATOR-STAPLER

Collamatic Corp., Wayne, N. J., makes the Collamatic Collator-Stapler-Stacker which collates, staples and stacks 8000 sheets an hour. The electric collator itself can collate up to 12,000 sheets an hour. Collated sets are placed on a conveyor

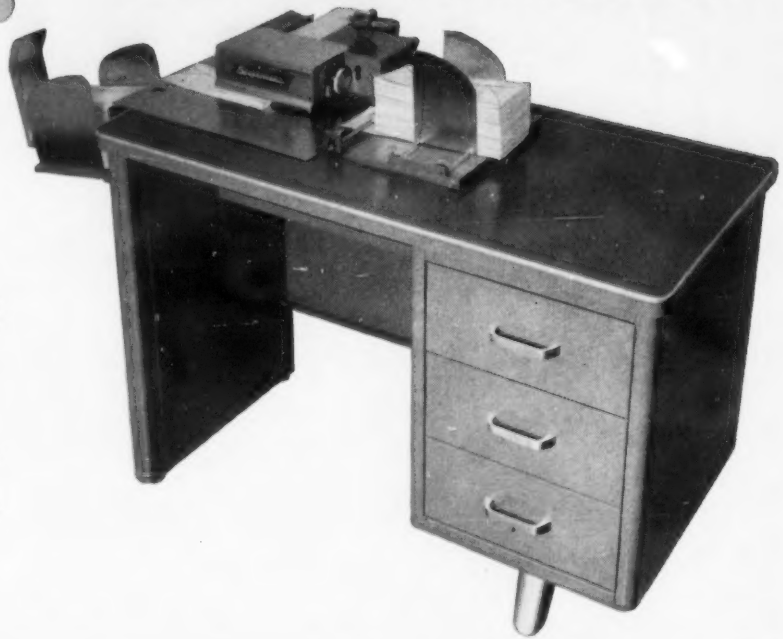
and automatically stapled and stacked while collating continues. Designed to handle letter and legal size sheets but can be quickly modified to take all papers from 5½" x 8½" to 10" x 14". Available with single or double-headed stapler, and choice of six models with 8, 10, 12, 14, 16 or 20 bins. Prices start at $1595. **For More Information Circle No. 105.**

AUDIO INSTRUCTION SYSTEM

Dictaphone Corp., 420 Lexington Ave., New York 17, N. Y., announces the Dictaphone AIMO system to provide taped voice instructions, rather than printed words or diagrams, for workers. AIMO (Audio Instructed Manufacturing Operation) was developed by Dictaphone in cooperation with Westinghouse Electric Corp. and tested at

NEW...

MODEL 10 SCRIPTOMATIC ADDRESSING MACHINE



NOW *EVERYONE* CAN CUT ADDRESSING COSTS *SUBSTANTIALLY!*

Scriptomatic advantages are now within reach of small list users with the new Model 10 Scriptomatic Addressing Machine.

HERE IS A TYPICAL COMPARISON OF FIGURES:

Of course, every installation has its specific requirements. These figures are reported only to guide you on relative costs.

Cost of Nearest Competing Equipment versus Scriptomatic Model 10

MACHINE X	$1,355.
Feeder	709.
Embossing Unit	1,560.
21,000 Plates, embossed and assembled	1,050.
Total Cost	**$4,674.**

NEW MODEL 10	$1,600.
Feeder	350.
Master Card Writer	630.
21,000 Master Cards typed including carbon, etc.	362.
Total Cost	**$2,942.**

SCRIPTOMATIC ALSO GIVES YOU THE ADVANTAGE OF COMBINING AN ADDRESS MASTER WITH A PUNCHED CARD. YOU GET LOW COST STRAIGHT RUN ADDRESSING OR HIGHLY SELECTIVE ADDRESSING, AS DESIRED.

The Model 10 is a compact, desk-mounted unit that is practically foolproof to operate. Insertion of material activates all operations: master feeding, ejection, counting and stacking. No hand levers or foot pedals. You can switch from hand feed to automatic feed, and vice versa, in less than a minute. No tools, clamps or bolts. No belt conveying mechanism. Scriptomatic prints from low-cost typewritten masters or punched cards. Prints on standard material of practically any type or size—booklets, broadsides, etc. The Model 10 is ideal for small runs and alternate hand feed or automatic feed operations.

Now *every* list user can mechanize for faster, more economical addressing and data writing by the modern Scriptomatic method. Write for free bulletin, "Advanced Approach to Addressing and Data Writing."

601

Scriptomatic Prints From Cards . . . With Double the Flexibility . . . at Half the Cost

Scriptomatic

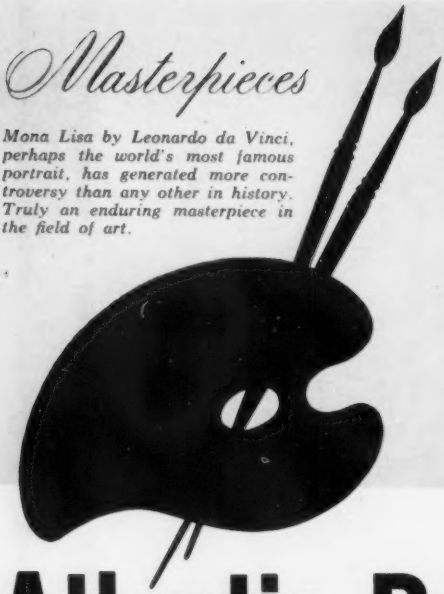
MODERN ADDRESSING-DATA WRITING MACHINES AND METHODS

SCRIPTOMATIC, INC., 306 North 11th Street • Philadelphia 7, Pa.

For More Information Circle No. 309

Masterpieces

Mona Lisa by Leonardo da Vinci, perhaps the world's most famous portrait, has generated more controversy than any other in history. Truly an enduring masterpiece in the field of art.



. . . of Fine Business Papers

The ALL NEW

Atlantic Duplicator

Genuinely watermarked for better printing impressions

NEW PULPS • NEW SHADE • NEW PACKAGING

EASTERN

Atlantic Manifest

EXCELLENCE IN FINE PAPERS

The ALL NEW Atlantic Duplicator is now a Genuinely Watermarked paper with the Substance Weight, is a smoother sheet with a higher affinity for faithful impressions. A leader in every way for use in spirit duplicating machines. Lint free, precision trimmed and moisture controlled, it feeds easier, runs better, produces clearer, sharper copies. Outstanding in quality and craftsmanship, Atlantic Duplicator is another masterpiece in fine business papers. Atlantic Duplicator is a modern business paper, made from fine pulps, in the finest and most modern mill in the industry. Electronically controlled Atlantic Duplicator assures you uniform quality for printing press and business machine reproductions.

EASTERN FINE PAPER AND PULP DIVISION

Standard Packaging Corporation

Bangor, Maine • Mills at Brewer and Lincoln, Maine

For More Information Circle No. 294

the Westinghouse East Pittsburgh plant where it contributed to an increase in productivity and reduced worker fatigue. Two machines are used, one for recording, the other to reproduce the recorded oral instructions. An indication button allows the instructor to clearly define successive blocks of information, one at a time, since most people can listen to and retain only small amounts of information at a time.

This button automatically registers a two-second, unrecorded place on the tape, which controls the stop operation of the reproducer and energizes a two-second audible tone heard by the instructor (but not recorded) to tell him that a block space has been made and prevent him from recording during the signal. It also registers numerically on the block counter. When operator is ready for instructions, he depresses a foot control lightly and momentarily. Reproducing machine runs automatically until a block space is reached,

Bud ®

TYPEWRITER TYPE CLEANER

ASK YOUR Office Supply or Typewriter Man To Demonstrate

BUD

PINK PLASTIC PUTTY

that pulls the dirt out of typewriter type rather than washing it into the machine

Easy as 1, 2, 3!

1. Flatten the putty by pressing very firmly.
2. Press it on all of the type. Do not rub.
3. Fold the putty back to original pyramid shape.

NO MESSY LIQUIDS to remove nail polish, spot or spatter clothes.

NO HARMFUL FUMES to cause headaches or colds.

To make neat erasures—just touch the word to be erased. Bud will absorb the surplus ink. Then erase and there will be no smear.

Retails for 50¢ each

Dealers—write for sample and cost

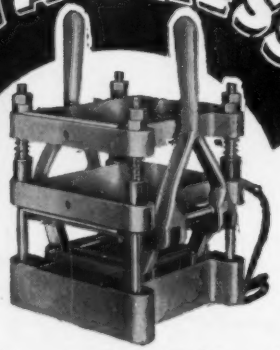
BUD TYPE CLEANER
P. O. BOX 4644
BALTIMORE 12, MARYLAND

For More Information Circle No. 328

NOW YOU CAN MAKE

RUBBER { PRINTING PLATES STAMPS

IN YOUR OWN OFFICE
WITH A HANDY *"Utility"*
EVA-PRESS



There are no costly delays checking proofs, waiting for deliveries of rubber stamps or printing plates when you own an EVA-PRESS. Anyone can easily operate it by following the simple step-by-step instructions.

- PERFECT impressions for every type of office printing . . . forms, postcards, business reply envelopes, address stickers, etc.
- MAKES up to 4" x 6" rubber plates and stamps cleanly, quickly, economically.
- PLUGS INTO 110 volts ordinary AC light socket . . . also available for DC current.
- TAKES UP less than two square feet on floor, table, or bench area.

UNCONDITIONALLY GUARANTEED!

Complete Presses From $200.00

AMERICAN EVATYPE CORP.
747 Osterman Ave. • Deerfield, Illinois

Please send details of your 60 DAY FREE TRIAL OFFER

Name _____

Address _____

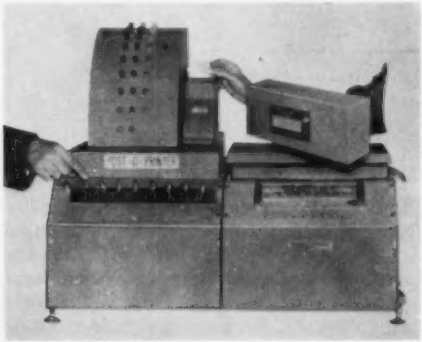
City _____ State _____

For More Information Circle No. 331

then stops. When operator is ready for his next instruction, he repeats the process. If he does not understand an instruction, or wishes to check it, he depresses backspace control and reproducer automatically goes back to the preceding block. Constant pressure on backspace control rereels magnetic tape as far as desired. A muting switch eliminates all sound when backspacing. Depending on the needs of a specific job, several start-backspace controls are available, as are different listening devices. Recording unit, complete with hand microphone, power cable and one Dictet tape magazine is $950. Reproducer, complete with power cable, is $750. Accessories include: Time-Master double foot control, $25; hand control, $32; under-the-chin listening device, $14; chin band, $13; Magic Ear, $12.50; inductive portable receiver, $100; hydraulic foot control, $40. Transmitting antenna is custom made to suit the application. **For More Information Circle No. 131.**

POSTAGE METER-SCALE

Detecto Scales, Inc., 540 Park Ave., Brooklyn 5, N. Y., makes the Post-O-Printer, an automatic scale and postage printing machine which can process up to 500 parcel post packages an hour with one operator. The package is placed on the scale



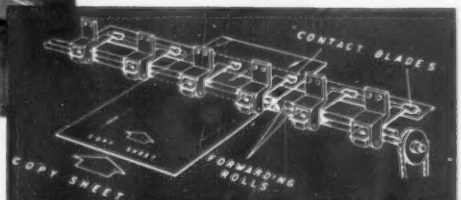
and one of eight buttons is pressed (for the proper zone). Machine automatically delivers a gummed strip with printed postage meter indicia for the correct amount. The postage meter unit is removable for resetting by the Post Office in the usual manner. **For More Information Circle No. 152.**

STANDARD INTRODUCES AMAZING REVOLUTIONARY *ELECTRONIC* FEED IN A GREAT NEW LINE OF FLUID DUPLICATORS

THE ROCKET *Starline* SERIES

THE CROWNING ACHIEVEMENT IN FLUID DUPLICATING

Standard



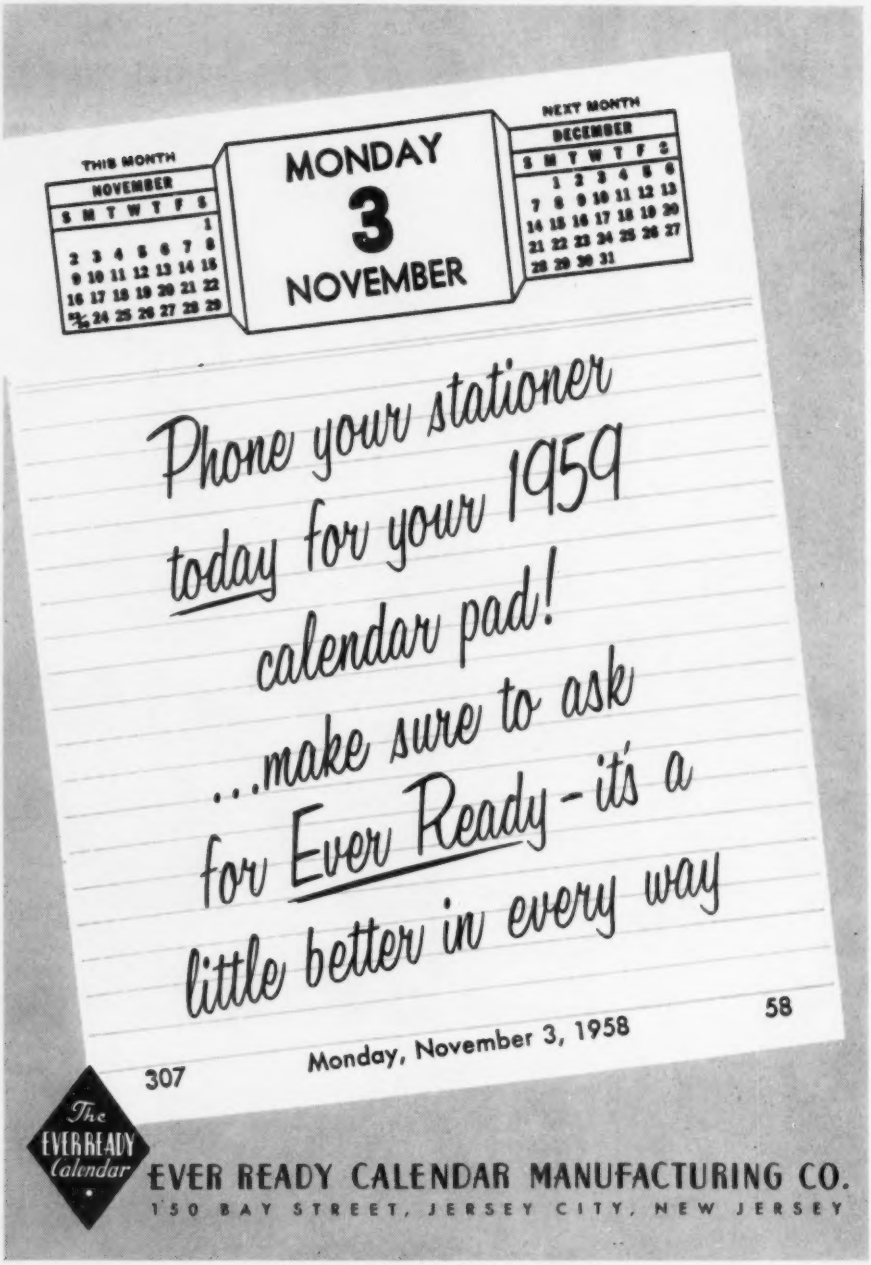
This dependable mechanism is sensationally efficient. Continuous action Forwarding Rolls instantly advance paper to Registration Rolls (not shown). As paper passes Contact Blades, it interrupts current, starts Registration Rolls, then Duplicator Drum in a timed sequence. Even the smallest practical size form sets duplicator in motion.

Operator skill in fast, accurate hand feeding of forms is made unnecessary by this Electronic Feed Duplicator. This skill has been built into the machine itself. It is almost unbelievable, yet a mere sheet of paper, advanced casually or even carelessly, will activate the duplicator for perfect copies in precise registration. Electronic Feed actually corrects operator errors in feeding. So fast is its action, a speed of 100 copies or more per minute in exact registration can be attained, even by an inexperienced operator. Model E14E-P above, revolves, lets you choose the operating position you prefer, front feed, side feed, etc. Write for free brochure.

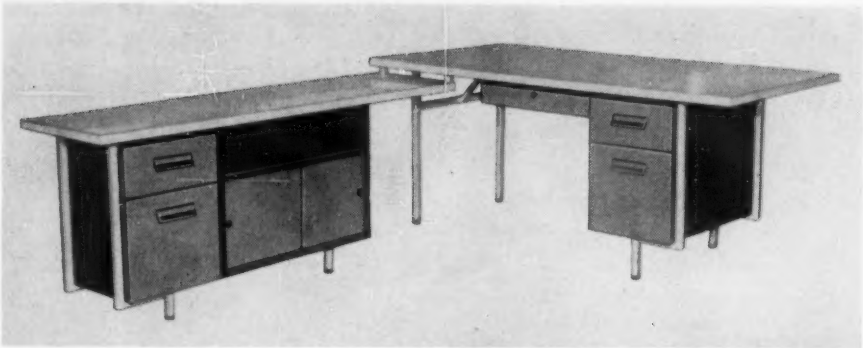
STANDARD DUPLICATING MACHINES CORP.

EVERETT 49, MASS.

For More Information Circle No. 224



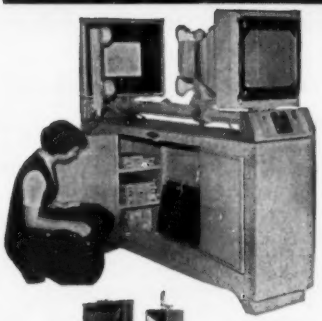
For More Information Circle No. 257



DESKS

H-O-N Co., Muscatine, Iowa, offers removable drawer fronts of vinyl clad steel in a wide selection of attractive patterns and colors on its Million Line desks. Matching back panels and credenza fronts are also made to carry out the theme of personalized styling. The vinyl plastic, bonded to steel, is durable, resists scuffing and fading to a greater extent than painted steel, and affords a pleasing relief to the overall desk appearance. Illustrating the concept of completeness and flexibility, the line offers a choice of pedestals in three depths, tops in eight sizes, leg designs in three different styles, and a wide variety of optional credenza components. **For More Information Circle No. 142.**

MILLER-TROJAN photo equipment
for top performance — at lowest cost



Write today for full details on these items —and FREE catalog on complete line

"SHARPSHOOTER" 11 x 14 CAMERA

Top reproductive quality, heavy steel and aluminum construction and features usually found only on expensive cameras make the Sharpshooter your best office camera buy. Features include 18 x 22½ copy board that tilts to horizontal position for easy loading—four 300 watt reflector flood lamps on pivotal arms—a reset timer that automatically controls shutter and lights—a Wollensak lens with focusing scale—and a cut film holder with focusing back that permits use of all film sizes up to 11 x 14. Camera measures 42 x 72—enlarges twice and reduces three times—requires only semi-skilled labor. Xerography back available **Camera ONLY $795.00. Base ONLY $112.75.**

"T-FORMATION" PLATE PRINTING UNIT

Makes perfect line and halftone plates in as little as 2 minutes—requires minimum space. Complete unit includes arc lamp with pedestal stand, vacuum frame, mounting stand, ¼ HP motor with switch, vacuum pump, fast-acting lock, extension cord and rubber feet. Sizes: 11 x 16, 12 x 24, 20 x 24, 22 x 28. **11 x 16 frame unit ONLY $178.20. Arc lamp with stand ONLY $96.80.**

MILLER-TROJAN CO. MILLER-TROJAN CO., INC., TROY, OHIO

For More Information Circle No. 319

For chart makers, engineers, draftsmen, layout men . . . anyone who has to "draw" broken, dotted or solid lines . . . these new 1/16" and 1/32" Chart-Pak Curve-Line Tapes can save hours of drudgery.

(1/16" Curve-Line)

Precision printed, precision slit, pressure-sensitive — easily applied either freehand or with new Chart-Pak "Tape-Pen" (as shown) —Curve-Line Tape will follow a straightedge, curves, angles — smoothly and accurately.

(1/32" Curve-Line)

In 8 styles, 14 colors, Curve-Line is the newest in the Chart-Pak line — which includes hundreds of patterns and combinations; also Border Line Tapes, templates for plant and office equipment layout, Pictograph and flow-chart symbols, and plastic workboards.

- Facilities for special printing, precision slitting, of special patterns, templates and symbols to your order.

For Full Information and name of distributor nearest you, mail the coupon below.

CHART-PAK, INC.
13-43 River Road, Leeds, Mass.

Please send information about Chart-Pak.

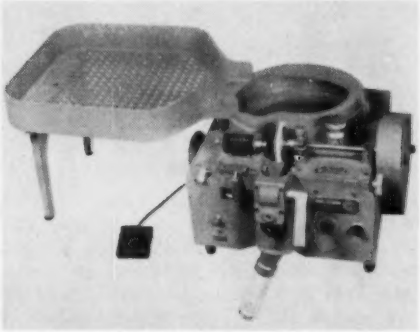
Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State_____

This coupon border made with Curve-Line Tape

For More Information Circle No. 321

AUTOMATIC COIN COUNTER

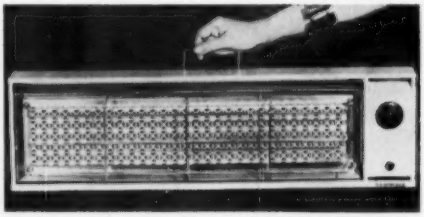
Abbott Coin Counter Co., 144th St. & Wales Ave., New York 54, N. Y., announces the Model 7 Abbott Coin Counter which can count over 3000 coins a minute. A patented disc pad prevents machine from being overloaded. Instead, machine's speed increases with increased load.



An electronic push-button release replaces the former hand release to reduce operator fatigue. Flashing red signal indicates end of coint count. Electronic reset foot switch frees operator's hands. Oil impregnated bearings provide long service without maintenance. The machine is more compact because the motor is hung underneath. **For More Information Circle No. 104.**

PORTABLE ELECTRIC HEATER

Heatmore, Inc., Dept. TO, 651 Driggs Ave., Brooklyn 11, N. Y., makes the Heatmore electric heater which radiates heat from a ceramic panel. It has no moving



parts and is safe to use because there are no glowing wires. The heater is 8½" high, 28" long and 5" deep with 8-ft. cord and plug. It weighs 11 lbs. and comes in choice of metallic gray, black, turquoise, pink and

NOW...OFFICE DUPLICATING IS EASIER

and more foolproof than ever

1493 Authorized Dealers across the U. S. A. and Canada offer these amazing new Conquerors . . . now better than ever with these important operating improvements, the result of Heyer's 55 years of duplicator know-how.

Many other outstanding features such as Copy Positioner Control, Nylon Gears, Visible Fluid Supply. Sure Fluid Control (no pumps), and Automatic Start-Stop on electric Conquerors offer a combination that's unmatched. Don't confuse them with photocopy machines . . . Conqueror Duplicators print 110 clear, sharp copies *per minute* . . . in 1 to 5 colors *at once* . . . of anything typed, drawn or written on a spirit master . . . *at a fraction of a cent per copy!*

MODEL 70 – Hand Operated with all features except electric drive..... **$214.50***

MODEL 76A-Electric, Automatic Start-Stop (illustrated)..... **$299.50***

MODEL 76B-Automatic Electric with 11" and 14" cylinder stop selector... **$324.50***

*Plus F.E.T. Prices slightly higher in Canada

4 MAJOR ENGINEERING ADVANCES
AT NO INCREASE IN PRICES

1 **New Feed Table**
Advanced design eliminates side rubbers and tricky adjustments.

2 **Improved Counter**
Direct gear drive–greater accuracy, top visibility, easy to re-set.

3 **Adjustable Feed Wheels**
–grip paper firmly at outer edges, give positive performance.

4 **Feed Tension Control**
–assures non-skip feeding—thin papers to post card weights.

The HEYER Corporation, 11-58
1821 S. Kostner Ave., Chicago 23, Ill.

☐ Send Free Brochure on Heyer Mark III Conqueror Duplicators

☐ Arrange Free Demonstration

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

For More Information Circle No. 295

MODERNIZE YOUR FILING SYSTEM

EASILY WITH EUREKA®

Roll Labels

NO. 60—Easy Starting slit and accurate perforations assure quick, clean tear—reduces spoilage—eliminates retyping—saves time. Deeply scored for speedy, uniform folding. Heavily gummed for easier application. Available in white, blue, manila, green, cherry, canary, buff, salmon and goldenrod. Free-Feeding typewriter carriage box of 250 labels, each 1 5/16" x 3 3/4" . . . . . 45¢

Fanfold Labels

NO. 50—SAME SUPERIOR QUALITY as EUREKA'S Roll Labels, but packed in Fan Fold box for typewriter use. Available in white, blue, buff, canary, cherry, goldenrod, green and salmon. Box of 500 labels, each 1 1/8" x 3 3/4" . . . 75¢

AT YOUR FAVORITE STATIONER

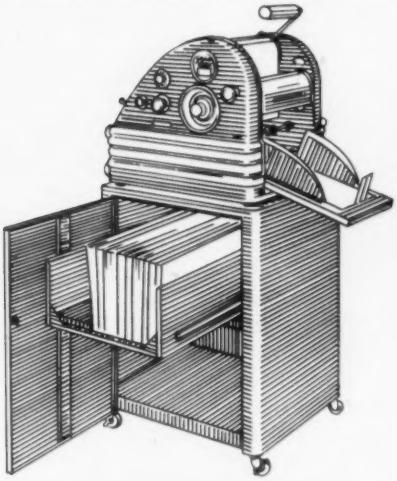
EUREKA SPECIALTY PRINTING COMPANY
Dept. 21 - Scranton, Pa.

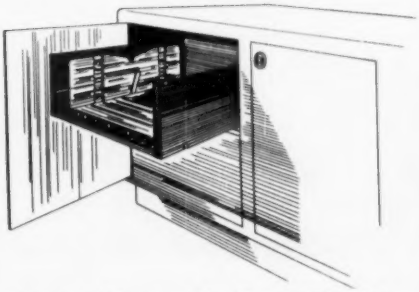
For More Information Circle No. 204

yellow with chrome and aluminum trim. Thermostat control can be set as desired. Mercury safety switch automatically turns off current if heater is tipped over. Signal light indicates when unit is on. Carrying handle folds into top and there is accommodation for storing wrapped cord when not in use. Rated at 1000 watts, listed by Underwriters Laboratories, retails at $39.95. Larger and smaller units also are made. **For More Information Circle No. 146.**

DUPLICATOR CABINETS

Milo Harding Co., 129 Tempo Bldg., Monterey Park, Calif., has added two dual





purpose cabinets to the Tempo line. These cabinets hold the duplicator and provide filing space for stencils and storage space

WHEN QUALITY COUNTS

Mend it, mount it, bind it, attach it quicker more efficiently! Use permanent, waterproof, transparent UHU in your office.

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UHU Products Corp.,
820 Greenwich St., New York 14, N. Y.

For More Information Circle No. 322

Spot and prevent trouble at a glance

NEW! VU-BOARD®

BY THE ORIGINATORS OF WALL BOARD CHARTING AND PRODUC-TROL

Low cost — unlimited Visual Control

- Shows all important data—a fast, accurate, complete picture
- Easy to set up and operate—wall or desk use
- Boards fit together horizontally or vertically to increase item capacity
- Inserts can be shifted *without* removing from board
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- Light, compact all metal construction—designed for a lifetime

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Westport, Conn.

Please send free Booklet on VU-BOARD

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For More Information Circle No. 323

Don't break your back digging up buried information!

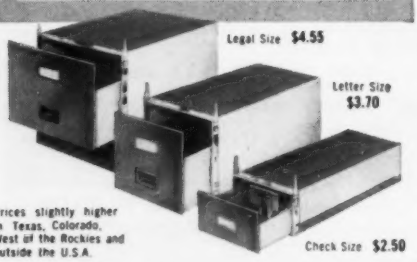
LOCATE YOUR RECORDS EASILY—No more fussing and fuming. With Pronto files your records are as active as your regular files.

BEAUTIFUL APPEARANCE—Finish in attractive olive green to match your regular office files.

STURDY CONSTRUCTION—Built of 275 lb. tested corrugated fibre board . . . reinforced with steel on the shell and the four corners of the drawers as well.

SAVE FLOOR SPACE—Prontos are constructed to interlock into solid units and stack as high as the ceiling.

PRONTO STORAGE FILES



Prices slightly higher in Texas, Colorado, West of the Rockies and outside the U.S.A.

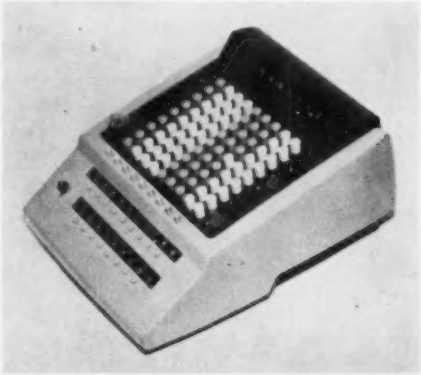
PRONTO FILE CORPORATION
415 MADISON AVENUE, NEW YORK 17, N.Y.

For More Information Circle No. 318

for supplies. The duplicator shown on cabinet in the illustration is the Tempo-Geha Paste Ink Model 300DA with built-in collator-interleaver which permits printing fine copy on stock from postcard to airmail weights. For specifications and prices of the cabinets, **Circle No. 110.**

CALCULATOR

Plus Computing Machines Div., Control Systems, Inc., 5 Beekman St., New York 38, introduces a Plus Adding Calculator with Magic Multiplication, described as a major development in key-drive calculators. This Plus-O-Matic machine embodies all the features of the Plus line, including the upper memory register for



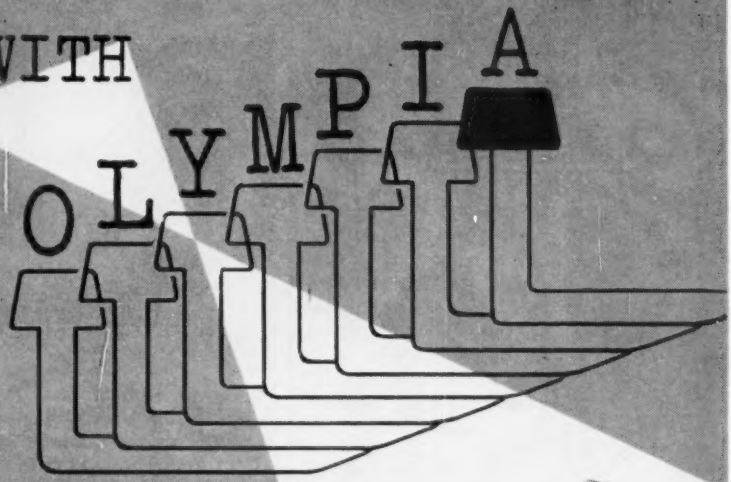
automatic grand and net-totals, direct automatic subtraction and automatic rounding off to the full cent. The Magic Multiplier feature affords faster multiplication by eliminating thousands of key depressions per working day. All multipliers are visibly displayed and operation is completely automatic. The machine is simple enough to operate in just a few minutes. Plus-O-Matic calculators are available in Simplex and Duplex models and in 9/10 and 12/13 capacities. **For More Information Circle No. 156.**

LAYOUT-CHART KITS

Labelon Tape Co., Dept. O, 450 Atlantic Ave., Rochester 9, N. Y., offers three Graph-A-Plan kits, containing all necessary supplies for basic charting. There are an

BE LETTER PERFECT

WITH OLYMPIA



For better letters, for accuracy and for speed write with the modern OLYMPIA to know what fine typing can really mean. Here is a typewriter conceived and created to be second to none . . . to bring you a new sense of typing perfection, smooth operation and utmost satisfaction.

Ask for FREE trial from your nearest authorized Olympia dealer.

And just consider these many OLYMPIA features!

- Automatic paper injector for quick and accurate letter and envelope insertion.
- Convenient half-spacing . . . ideal for index cards, ruled paper and letter writing.
- Inter-changeable carriages save money and time. Carriages of any size interchanged in seconds.
- Accurate and easy to set margin stops and automatic tabulator clearance.

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*Writes **BEST** of all . . .*
*Because it's built **BEST** of all*

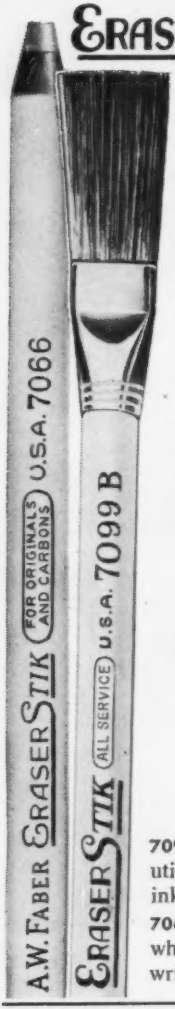
OLYMPIA DIVISION INTER-CONTINENTAL TRADING CORPORATION
90 WEST STREET • NEW YORK 6, N. Y.

For More Information Circle No. 205

I'd just as soon give up my lipstick as my

A.W.FABER

ERASERSTIK®



"Every girl who uses an A.W.FABER ERASERSTIK knows what I'm talking about. It's just impossible to do a clean letter without an ERASERSTIK. Mistakes happen—but they're no problem if you whisk 'em away with your ERASERSTIK."

Girls, become a *better* Secretary by cultivating the ERASERSTIK habit. With this pencil-shaped, white-polished beauty you *erase without a trace,* turn out beautiful letters. Pick up a few from your stationer.

Which point do you prefer?

MEDIUM or AVERAGE

THIN or BLUNT

ERASERSTIK gives you your choice

With brush **20¢**
Without brush **10¢**

7099 and 7099B gray all-utility ERASERSTIK for pencil, ink or typewriting.

7066 and 7066B for those who prefer a soft, red typewriter eraser.

A.W. Faber-Castell Pencil Co. Newark 3, N. J.

For More Information Circle No. 329

Office Layout Kit, Statistical Kit, and Organization & Flow Chart Kit. The Statistical Kit contains over 30 assorted roles of tape, together with plangrids. Each kit is available with transparent materials

for diazo reproduction, or with opaque materials for photocopying. For full details, including free instruction manuals on any of these three types of charting, **Circle No. 118.**

INTERCOM

J. M. Loge Sound Engineers, 2171 W. Washington Blvd., Los Angeles 18, Calif., makes the two-way Kwik-Kall Executive intercom which serves as a telephone stand and comes in matching telephone colors.

The unit takes up little more space than the phone alone, yet permits two-way conversations with up to 12 other stations. The intercom is completely independent of the telephone. Available in standard telephone colors: black, moss green, rose beige, ma-

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NO Glue
NO Adhesives
NO Stickiness

this is the Klean Write PLIO-WELD stencil

At last . . . a film stencil that holds the film firmly to the stencil back without the use of glue or adhesives!

A sensational new film stencil developed by Frankel's research staff. Cleaner and easier to use . . . corrections are made faster, with less trouble. Completely ends all objections to film type stencils. Available in all colors for American and foreign duplicating machines.

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in sizes to accommodate over

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AMERICAN REGISTER CO.

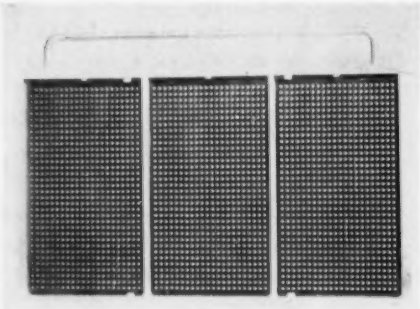
511 E. First St. Boston 27, Mass.

For More Information Circle No. 340

hogany brown, gray with gold speaker grille. Priced from approximately $135, the Executive is available in six and 12-station models. Optional accessories include annunciator and buzzer which announces each incoming call, and lights to indicate busy stations. The unit is equipped for plug-in installation and can be interconnected with a variety of complete master stations or receivers. **For More Information Circle No. 132.**

MACHINE WIRING PANEL

Mac Panel Co., 105 Gaylord St., High Point, N. C., producers of a complete line of control panels and wires for electronic accounting machines and data processing

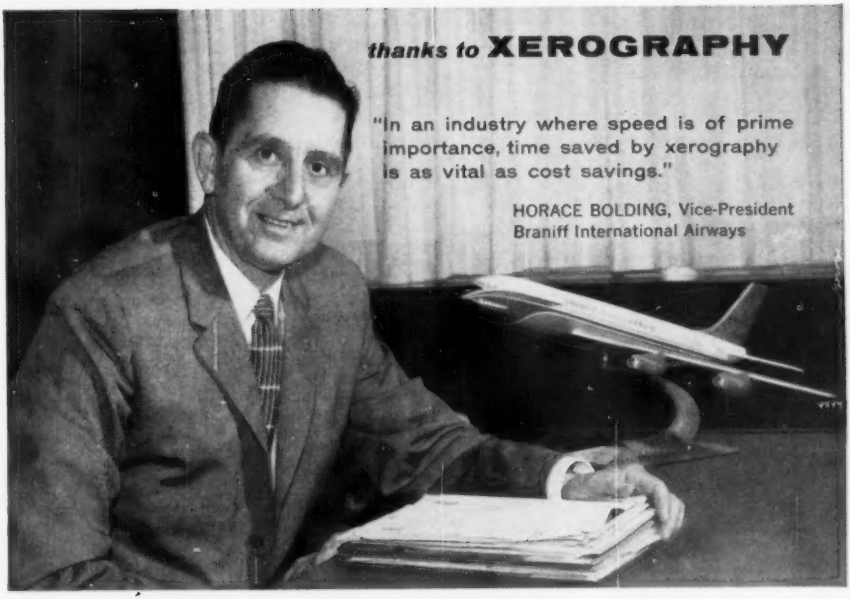


IBM equipment, announces the 402-3 panel which uses the same self-contacting wires as their other self-contacting panels and results in faster and easier insertion of wires. **For More Information Circle No. 176.**

CORRECTION CHALK

A. W. Faber-Castell Pencil Co., Newark 3, N. J., makes TouchupStik, a pure white correction chalk of special composition, which allows typists to make completely invisible erasures on white stationery. After

the typist makes an erasure of either a typewritten letter or word, she gently rubs TouchupStik over the typewritten area to completely cover any remaining imperfec-



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With its first Boeing 707 jet airliners scheduled for delivery in 1959, Braniff International Airways is relying on xerography and offset duplicating for fast and economical copies of maintenance, ground operations, and flight-training manuals to educate its 5,000 employees in the transition from conventional aircraft of today to the jet era of tomorrow.

"Thousands of pages of highly technical information, charts and illustrations will be reproduced by xerography and offset duplicating at one-fourth the cost of the photo-negative process," says Horace Bolding, Braniff's vice-president—purchasing and stores. "We'll save at least $30,000 yearly.

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Model for all types of phones and dictating machines.

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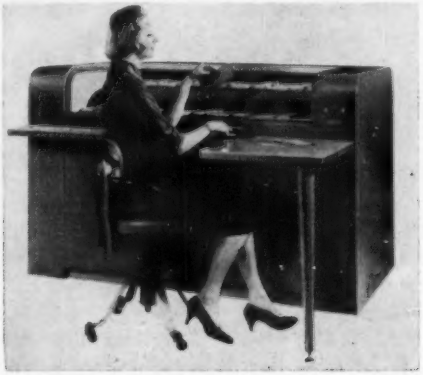
For More Information Circle No. 338

tion or immovable ink deposit. This creates a new white coating over which she can type her correction. A. W. Faber TouchupStik is paper-wrapped and may be sharpened in any conventional hand or mechanical pencil sharpener. Retail price per stick 10c, $1. a doz. **For More Information Circle No. 167.**

CARD FILES

Remington Rand Div., Sperry Rand Corp., 315 Fourth Ave., New York 10, N.Y., makes a large-capacity Kard-Veyer mechanized filing unit, designed to simplify and speed operations requiring reference to large numbers of cards, records, master punched cards, etc. Offered in four standard models which may be modified in height, width, or both, to suit user's requirements. As many as 75 different sizes and capacities are available to meet space limitations, floor layout, operational problems, and organization of work stations.



The increased filing capacity of the new models ranges from two to ten times that of present Kard-Veyer units. Like the smaller models, they provide a push-button selector which brings a desired tray of cards to proper working level of seated operator. Operation is practically noiseless and vibrationless. A straight front design permits constant illumination on every card, free ventilation and ease of supervision, a posting shelf within proper visual area of the operator, 22″ by 22″ of work area, and compartment for operator's per-

It used to play music...now it writes your letters!

Auto-typist record "memory" roll operates the typewriter to write personalized letters . . . by automation!

Remember the player piano and its perforated roll that played the notes? Similarly, Auto-typist's paper record "memory" roll operates the typewriter keys to write your letters . . . automatically and accurately!

One typist can produce 100-125 letters a day with Auto-typist – 3 to 4 times manual typing output. And, it's so simple . . . precomposed numbered letters or paragraphs are perforated on the roll, which holds up to 250 lines. Letters or paragraphs are numbered to correspond to push-buttons, then Auto-typist automatically picks them out and types them perfectly! Manual insertions can be made at any time. Auto-typist eliminates routine typing and dictation and will cut your correspondence costs.

Write for free copy of the new booklet "60 Best Business Letters" that covers all types of business.

Auto-typist

For More Information Circle No. 219

AMERICAN AUTOMATIC TYPEWRITER CO., 2323 N. PULASKI RD., CHICAGO 39, ILL. • MANUFACTURERS OF AUTO-TYPIST, COPY-TYPIST AND CABLE-TYPIST

ROCK 'n ROLL?

NOT IN THE OFFICE!

Tiffany's shake-proof construction just cannot rock 'n roll. Exclusive design features eliminate tiring vibration and greatly abate nerve-racking machine noises. That's why they're "first choice of office workers and management everywhere."

MODEL 5000

MODEL 5002 identical with Model 5000 except that it has 2 leaves

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MODEL 8002

EXTRA-HEAVY DUTY stand for Electric Typewriters, Bookkeeping Machines, etc. VIBRATION-Free, amazing strength and rigidity. Open-top . . . the "escape-hatch" for noise dissipation.

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MODEL 2300

UTILITY TABLE with countless uses in offices, factories, schools, hospitals. Heavy steel throughout. Rounded corners on tubing. Table is stationary with brakes ON; portable with brakes OFF.

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BOOK STAND

Has self-leveling top; automatically keeps pages flat for "reading with ease from ABC's through the XYZ's." It's portable. Adjustable height. Saves time. Saves energy. Takes only 16" x 21" floor space.

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For More Information Circle No. 203

sonal effects. Motor is electrically reversible and an integral part of a gear reduction unit which eliminates additional drives, lost motion and back lash. Unit may be operated constantly throughout the day. Safety devices protect both operator and unit from injury. Available in two-color finishes to blend with aluminum and chrome. Lightweight, counter-balanced aluminum anodized hood is precision fitted against dust. **For More Information Circle No. 106.**

MAIL CHUTE

Cutler Mail Chute Co., 75 Anderson Ave., Ro-

chester 7, N. Y., makes the Moderne Mail Chute designed to conform with modern architecture and provide an economical, packaged installation. It presents a completely plain and neat appearance and features flush panel mouldings, bases and ceiling members. The continuous vertical sides of .105 extruded aluminum in satin finish clear alumilite (or enamel color), or .078 steel with supplementary covers in bronze, nickel bronze, or stainless steel. Each chute has removable glass panels. Floor connections and backs, bases, lock bands and ceiling collars are heavy metal plate at least 3/16"

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- **Consistently even, legible impression, with perfect alignment on ALL copies—no "fade-off" or "blurring" common with hand-operated devices.**

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Eliminates irritating rubber fingers... messy, unsanitary sponges

Easy to use—just apply to fingertips for greaseless, stainless, tacky film. Pick up papers easily, quickly.

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Non-allergenic—Recommended by dermatologists.

Long-lasting—attracts moisture to fingers, making one application long lasting.

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Enclosed is $1.00 for two trial containers of SORTKWIK.

Name_____

Company_____

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For More Information Circle No. 428

thick. A mailing pocket, lock and penalty card frame are furnished for each story. The chute is pre-cut and packaged for each story, so that entire installation can be erected by qualified personnel on one visit to the job. Chutes are manufactured and installed in accordance with the rules and regulations of the Post Office Department. **For More Information Circle No. 125.**

LAMINATION FOR PAPERS

Chicago Desk Pad Co., 4640 North Oketo, Chicago 31, Ill., announces Cleer-Adheer, a do-it-yourself laminate sheet made of DuPont's Mylar polyester film which can be used to permanently laminate documents, licenses, forms, photographs,

cards, lists, etc. Mylar has great transparency, strength and scratch resistance; remains flexible throughout continued use, and is oil, water and heat resistant. Cleer-Adheer sheets are coated with a transparent, pressure sensitive adhesive backing and are used without special equipment, skill or heat. The material is cut to fit the object to be laminated leaving a slight overlap, pressed onto the object by hand and the excess along the edges is trimmed off, leaving the object permanently protected and tamper-proof. Cleer-Adheer is packaged with two 11⅜"x8⅞"

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Now you can have
Cormac copy quality—the finest...
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If you have held off buying a photocopy machine because of production limitations, hesitate no longer. If you have a photocopy machine but not a Cormac, you can adapt the PolyCopy process to it. And—if you own a non-photocopy machine, trade it for a Cormac with the PolyCopy process. Get photo-sharp, permanent black and white copies which skip nothing —*with the new dimension* of *unlimited quantity!*

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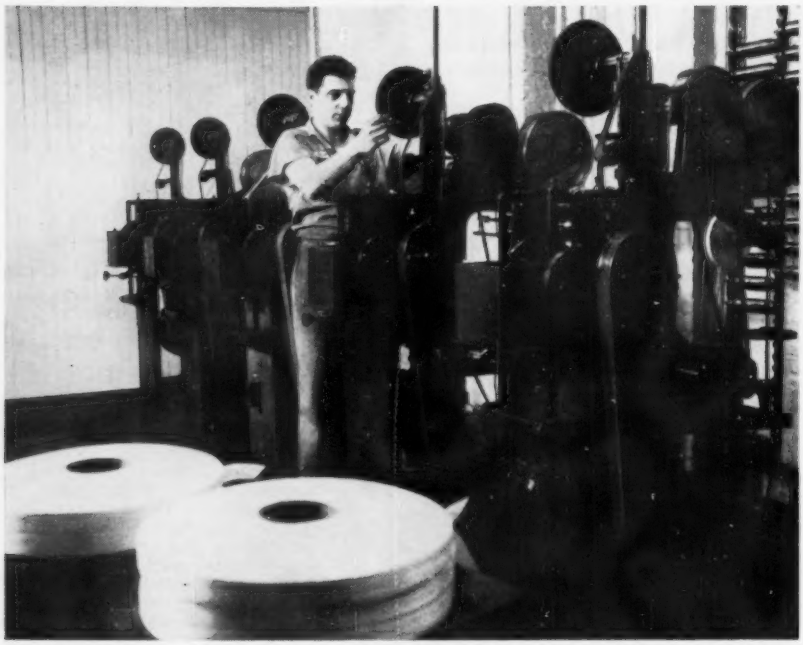
CM-5

For More Information Circle No. 366

CRAFTSMANSHIP



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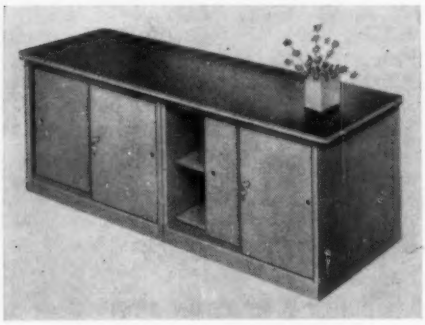
sheets retailing at 59c. A self-selling display box contains 25 packages. Cleer-Adheer is also available in large sheets and rolls for commercial use. **For More Information Circle No. 174.**

CREDENZA

Cole Steel Equipment Co., 415 Madison Ave., New York 17, N. Y., makes the No. 1712 Credenza in its Tailor Made line of steel office furniture. This credenza has two sliding doors and ample shelving for books, records and other papers. As a companion unit to a desk, it provides a spacious work area and complements other



office furniture. Made of heavy gauge steel, the unit has a smooth linoleum top trimmed with aluminum. Available in mist green, desert sand or Cole gray baked enamel finish with matching or contrasting linoleum tops. Unit is 63½" wide, 29" high, 19¼" deep; costs $122. **For More Information Circle No. 121.**

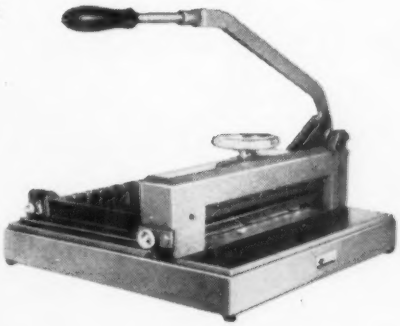
DIRECT POSITIVE PAPER

Peerless Photo Products, Inc., Shoreham, N. Y., announces a Photo-Positive paper for one-step direct-positive reproduction of engineering drawings. The Peerless paper has a 100% rag content base stock which gives high wet strength, improved dimensional stability and provides great uniformity of transparency. The rag content base stock cuts easily, cleanly and evenly, without tearing irregularly. The translucent material is wet-erasable without bleed or feather when pencil or ink lines are drawn

FOR OFFICE, BOOKKEEPING AND DUPLICATING DEPARTMENTS

'Triumph'

the precision Paper Cutter low-priced and easy to operate



For every business: Banks, hospitals, insurance companies, industrial organizations with duplicating departments, stationers, photo finishers, small printers, lettershops, mimeograph, offset shops, advertising agencies, schools and colleges.

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● Write for Profitable Dealership Plan.

For More Information Circle No. 334

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Beautifully engraved. Choice of 4 colors in Bakelite and Tenite to match your office decor.

Available with pen holder and pen (optional).

Write for brochure listing sizes, colors and prices. from **$2.95**

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For More Information Circle No. 335

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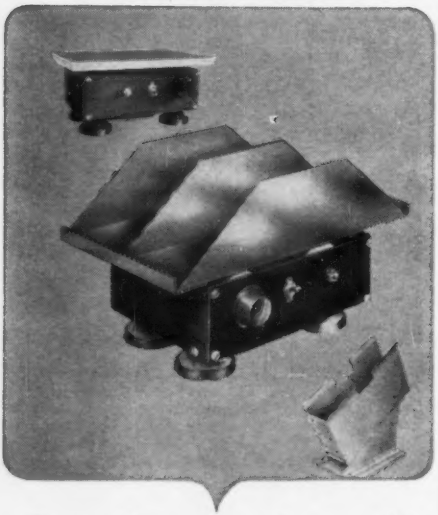
Vibrating

ENVELOPE JOGGERS



Save time opening mail

SYNTRON Envelope Joggers save time, labor and reduce paper losses. Their high speed (3600 vibrations per minute) vibrating decks quickly loosen and shake down contents of envelopes for manual or automatic opening; align scrambled stacks of checks, time cards, punch cards, speeds assembly of manuals, etc.

Power of vibration is easily adjusted to the flow characteristic of stock by a simple dial.

Built for long dependable, trouble-free service. Available as table deck, divided deck or bin type jogger. PJ5580

Write for FREE information today.

SYNTRON COMPANY
715 Lexington Ave. Homer City, Pa.

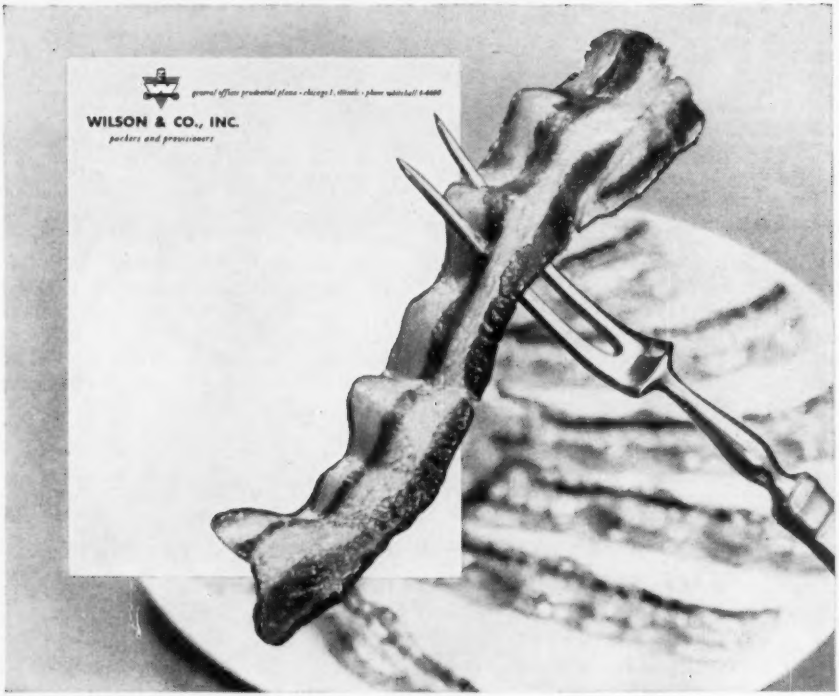
For More Information Circle No. 336

over an erased area. It has a fast printing speed, and a high silver content that produces an image of greater density, resulting in better contrast. Because of the translucency of the base stock, whites are cleaner. Peerless Photo-Positive paper is supplied in two grades: extra-thin, a 55 gram .003″ thick paper; and a transparentized vellum; in rolls up to 42″ wide, spooled to fit all standard reproduction machines, or in cut sheets of any desired dimension up to 42″ wide. The paper gives a direct positive reproduction from the original, without a negative, when exposed in any contact printer with an orange or yellow high intensity light source. Peerless will supply an appropriate filter if user does not already have suitable light source. Processing can be done in ordinary room light with standard processing solutions. Drawings too dense for reproduction directly on a blueprint or diazo machine can be copied with Peerless Photo-Positive, using the reflex technique. A reverse-reading intermediate is obtained to make right-reading final reproductions. **For More Information Circle No. 140.**

SPOT CARBON FORMS

Cullom & Ghertner Co., 600 21st Ave., Nashville 4, Tenn., announces an expansion of its Carb-O-Copy services making possible the production of a greater variety of hot wax carbonized forms. Carb-O-Copy forms do not smudge and can be used with typewriter, pen, pencil, addressing and accounting machines. The process can be used on a wide variety of papers, and it permits control of the written material from copy to copy so that only selected information appears on each part. Carb-O-Copy forms will produce from one to 12 copies, depending on the usage and weight of paper. Average reproduction is 12 copies on electric machines, eight on manual typewriters and six copies for pencils and ballpens. The process does not require special papers and can be used on stock ranging from tissue to cardboard. Carb-O-Copy is available in red and blue as well as black. **For More Information Circle No. 136.**

CRISP!



Gilbert Papers

Hit the people you write with a bring-home-the-bacon letterhead paper. One that will be a stand-out in the morning mail . . . get attention . . . get results. Crisp, Gilbert Bond papers have these qualities. They're made with new cotton fibres, tub-sized, air-dried and available in brilliant new Hi-Fi white. Your printing supplier can tell you all about them . . . furnish you samples. Ask him.

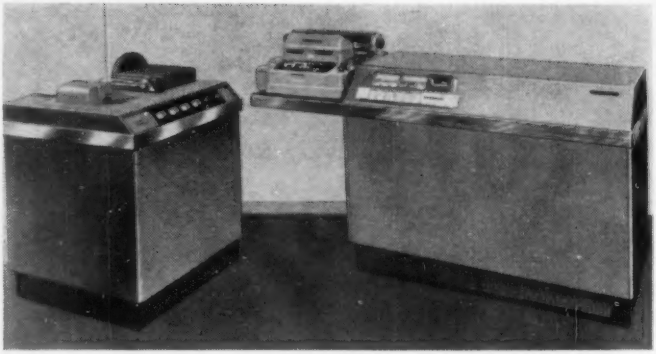
BETTER COTTON FIBER PAPERS

GILBERT PAPER COMPANY, MENASHA, WISCONSIN

A good letter is always better . . . written on a Gilbert Cotton Fibre Bond

For More Information Circle No. 425

COMPUTER INPUT-OUTPUT

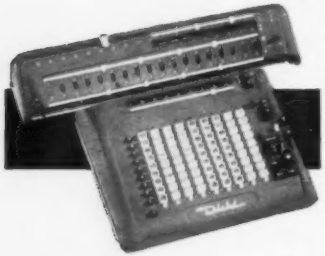


Royal McBee Corp., Port Chester, N. Y., announces an auxiliary input-output system as optional equipment for the LGP-30 electronic computer for use in processing large quantities of data. The Model 341 Reader operates on a photoelectric principle and can read punched paper tape at 200 characters a second. It is reliable and practically noiseless in operation. The Model 342 incorporates both the high-speed reader and a high-speed motorized paper tape punch in the same unit. The punch operates at 20 characters a second. Tapes are fully compatible with the paper tape typewriter provided as standard equipment. Convenient controls provide flexibility of operation. Either the reader or the punched tape typewriter may be connected for input and either the punch or typewriter may be connected for output. Transfer of connections of the various input and output devices is simply effected by switches on the cabinet's panel. **For More Information Circle No. 139.**

Do you know?

All Diehl Storage Models are now available with a special round-off feature. This new equipment can be fitted to five storage dials for a small extra charge.

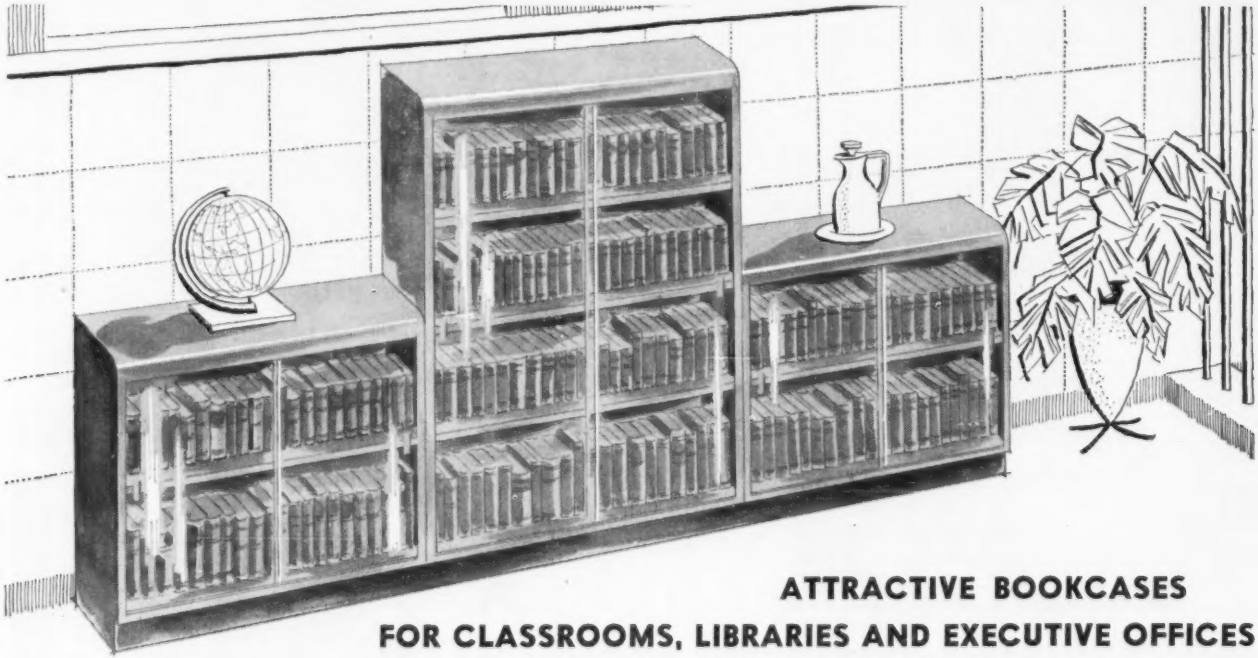
This feature is a complete new invention which allows unnecessary decimals to be omitted and figures over 5 to carry over 1 into the next higher decimal place.



There is no comparison with **Diehl**

DIEHL RECHENMASCHINENFABRIK · NURNBERG · STEPHANSTRASSE 49

For More Information Circle No. 341



ATTRACTIVE BOOKCASES FOR CLASSROOMS, LIBRARIES AND EXECUTIVE OFFICES

Economical price, handsome appearance and practical usefulness have established the H-O-N bookcase as a good school equipment value. Twelve different models in a choice of colors, and modular construction permit considerable flexibility in arrangement. Doors operate with ease on quiet nylon rollers. You are welcome to our literature on the complete H-O-N bookcase line. A matching duplicator cabinet is also available. May we show you more on these items?

H-O-N
OFFICE EQUIPMENT
MUSCATINE, IOWA

For More Information Circle No. 414

STEP-UP TYPING PRODUCTION*

Huron Copysette
PULL OUT Style

Pre-aligned carbons and second sheets for typewritten copies.

* Huron Copysette's pre-aligned method increases production of typewritten copies and provides copies of uniform legibility. More copies are produced per day at a lower cost per copy because HURON COPYSETTE gives the stenographer more time for typing by reducing preparation time. Each second sheet carries its own fresh carbon for sharper, more readable copies . . . copies are cleaner, too!

STATIONERS . . . we invite your inquiries.

Please send to me without obligation free samples of HURON COPYSETTE. 9

Name_____

Company_____

Street_____

City_____ Zone____ State_____

PORT HURON SULPHITE & PAPER CO., PORT HURON, MICH.

For More Information Circle No. 317

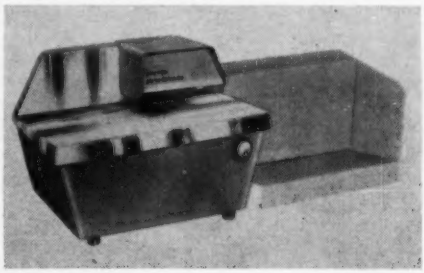
RECORDS SHREDDER

Industrial Shredder & Cutter Co., 103 Mill St., Salem, Ohio, makes the Model Silver 13-C Shredder for continuous operation in disposing of accumulations of obsolete records. This rugged machine will handle any paper from tissue to

corrugated, including file folders, booklets, bulky envelopes, stapled reports, paper clips and eyelets. Feed throat will take forms up to 12½" wide. The Silver 13-C is supplied with heavy duty 1 hp., 115 volt, single phase (220 or 440 volt, three phase) 60-cycle motor and reversing switch. Shipped on ten-day trial, if requested. **For More Information Circle No. 155.**

LETTER OPENER

Martin Yale, Inc., 2100 W. Fulton St., Chicago 12, Ill., announces that positive opening is assured by the new feed belt in

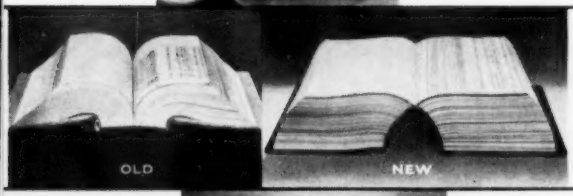


their Premier Auto Opener. Visible proof that the improved design means smoother, faster action is given by red and black

NYLON POST BINDERS

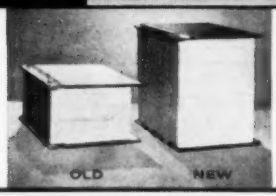
LOAD EASIER

No more rigid steel posts. Flexible Nylon bends for convenience and speed.



READ EASIER

Sheets lie flat. No hidden entries
. . . no wasted margins.



HOLD MORE

Up to 3000 sheets
. . . without protruding posts.

GrayLine Nylon Post Binders come in a wide range of sizes and styles. Your stationery dealer or tabulating supplies source will be happy to demonstrate them. Call him today. If he can't serve you at once send us this coupon.

WILSON JONES
TABULATING FORMS AND BINDERS

For More Information Circle No. 290

WILSON JONES COMPANY
209 South Jefferson Street, Chicago 6, Illinois
Please send us complete information about GrayLine Nylon Post Binders.

Name_____

Address_____

City_____ Zone____ State____

Our usual office supply source is

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MAXIMUM SECURITY

at

CONTINENTAL
NATIONAL BANK BUILDING
with

TELKEE

the complete system of positive key control

In Fort Worth's new C N B Building—and in thousands of stores, schools, plants and buildings across the country—a **TELKEE** System assures constant, fool-proof control over the keys to every lock.

TELKEE keeps keys in authorized hands; eliminates problems of lost keys; cuts costs of replacement locks and keys.

Available in capacities from 21 to 2240 key changes, there's a **TELKEE** System to fit your property, large or small. Write today for "The Key To The Whole Thing".

P. O. MOORE, INC.
A Subsidiary of SUNROC Corporation

TEL KEE — The MOORE KEY CONTROL System

GLEN RIDDLE 35, PENNSYLVANIA

For More Information Circle No. 344

TRY BEFORE YOU BUY!

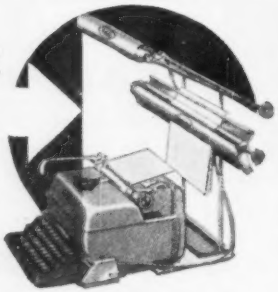
The New and improved
LINDICATOR COPYHOLDER

will make your typists happy because it holds the copy just right for perfect reading.

Guaranteed for one year. Precision built for years of trouble free service.

Non-vibrating, clutchless, and no stiff wire or cable.

Line by line spacing with easy hand or foot control.



Available in four widths—10½", 18", 24" and 30".
Magnifier has "ON" and "OFF" positions.
Holder for shorthand notebooks.
Copy-Lite for correct lighting.
Pedestal Models for accounting machines.

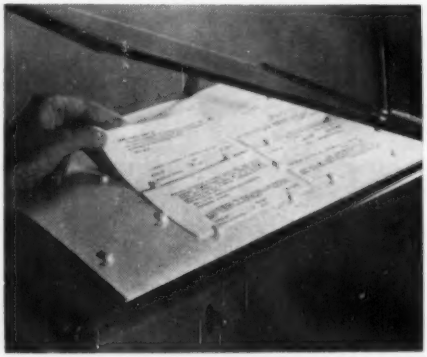
See your dealer or write to

ALLEN O'HARA
NATIONAL DISTRIBUTOR
713 M. & M. Bldg., HOUSTON 2, TEXAS
For More Information Circle No. 345

stripes which show that the belt moves, not only in a straight line but rotates, bringing constant pressure against the guide for more precise envelope opening. The Auto Opener, electrically operated, occupies about the same desk space as a letterhead and is designed for small offices as well as large. Entire unit, with self-positioning scrap tray to catch paper shreds and opened envelopes retails for $99.95. Unconditionally guaranteed for one year. **For More Information Circle No. 107.**

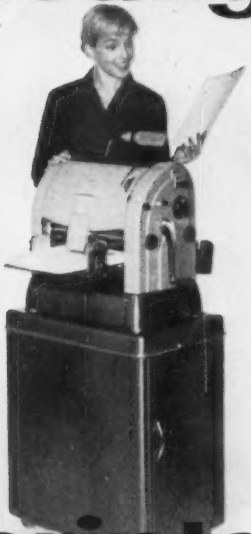
PHOTOCOPY CARD HOLDERS

Eastman Kodak Co., Business Photo Methods Div., 343 State St., Rochester 4, N.Y., makes Verifax Signet Card Holders which permit several cards to be copied simultaneously on one matrix. This saves time and money when copying small forms. Two Verifax Signet Card Holders are available for 3"x5" and 4"x6" cards. The holders can be substituted for the standard pressure pads supplied with the Verifax Signet Copier. Each holds up to four



cards. Retractable buttons assure uniform spacing between cards. When the glass plate is lowered to make an exposure, buttons are pushed back into the pad to assure even, overall contact. One Verifax Signet Card Holder accommodates four 3"x5" cards for exposure with a letter size matrix. The other permits simultaneous copying of four 4"x6" cards using a legal size matrix. List price for each card holder is $15. **For More Information Circle No. 153.**

copies electronically!



prints automatically!

THE ELECTRO-REX — left — revolutionizes stencil making. Insert type proofs, printed matter, clippings, drawings or pictures. While the drum rotates, every detail is faithfully copied — **electronically!** The only ability required to produce a perfect stencil or offset plate is **the ability to throw a switch!**

THE REX-ROTARY D-280 — right — gives true printing-press fidelity, 100% accurate printing-press registration for fill-ins and multi-colors. Fully automatic tone control of inking, rapid color changes — **all without messy fingernails!** No experience or skill required to operate, yet it turns out a professional printing job every time — at **substantial savings**. Electric models as low as $485. ⟶ Send coupon today for free demonstration.

REX-ROTARY

Rex-Rotary Distributing Corporation • 387 Fourth Avenue, New York 1, N. Y. • MU 4-5405

Please contact me regarding a free demonstration of ☐ Electro-Rex ☐ Rex-Rotary D-280

Name _____ Title _____ Firm _____

Address _____

For More Information Circle No. 422

Perfection

is the word for

Milwaukee's **METAL-LUX**

deluxe clerical posture chair

There is "executive distinction" in every line of this chair, from its foam rubber back-rest and Latex "Breathing Comfo-Cushion" seat to its streamlined swivel base. It has no equal for posture comfort and its good looks excel anything ever created in metal. Here is a chair which "belongs" where only the very best is desired. It's the chair that builds customer good-will for you. Write for complete details now . . . this perfection in posture can be the most profitable chair you've ever offered.

there is nothing finer in metal

MILWAUKEE METAL FURNITURE COMPANY
101 N. Campbell Ave., Chicago 12, Illinois

For More Information Circle No. 330

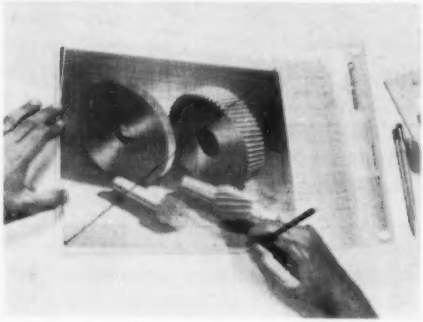
ELECTRIC NUMBERER-DATER

Pryor Marking Products, 434 S. Wabash Ave., Chicago 5, Ill., announces the electric Powermark coding, dating and numbering machine which adjusts automatically for carbon interleaved forms with up to 12 parts. Machines can have

from six to ten wheels and will operate as fast as forms are fed. Numbering can be consecutive, duplicate or repeat. Impressions are consistently even and legible with perfect alignment on all copies of a form and no fade-off or blurring. For literature showing type styles and prices, **Circle No. 173.**

SCALING SQUARE

Check-scale Products Co., Box 15781, Los Angeles 15, Calif., offers the Check-



scale for scaling and cropping photographs for reproduction, and squaring artwork,

ACME VISIBLE

'Tis a wise man who keeps his **INVENTORY** under **CONTROL**

Knowing what you have, where it is and when you need more will give faster, more dependable results—and real savings of work, time and money.

Correctly planned inventory records do much more than show "stock on hand"—they list sources, vendors, maximum and minimum quantities, time required for delivery and dozens of other important facts that really CONTROL inventory.

Acme has created and installed hundreds of different Inventory Control Systems. Perhaps one would suit your requirements. If not, your Acme man will design a record to your specifications.

ACME VISIBLE RECORDS, INC., Crozet, Virginia Q-1158

☐ Send us more information on Inventory Control Systems.

☐ We are interested in Acme Visible equipment for.....records.
Kind of Record

☐ Have representative call.

Date..... Time.....

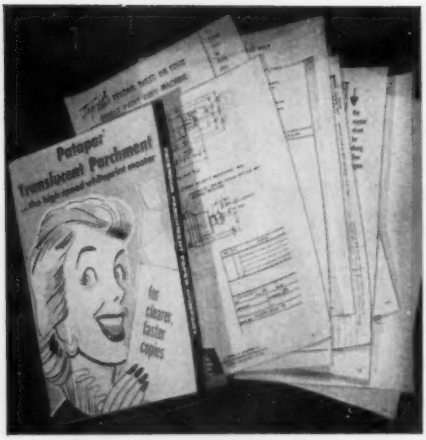
Company.....

Attention.....

Address.....

City.....Zone.....State.....

For More Information Circle No. 415



Want clearer copies from your

DIRECT PRINT COPY MACHINE?

You'll get them with
Patapar Translucent masters

SEND FOR FREE TESTING SAMPLES

Patapar Translucent Parchment masters assure copies that are consistently sharp and true. Patapar's high degree of translucency permits superfast transmission of the ultra-violet rays. There is no diffusion. The result is fast reproduction and utmost clarity.

Furnished in various weights including rigid card stock. Specially designed for Bruning, Ozalid and other diazotype copying machines.

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TRANSLUCENT PARCHMENT

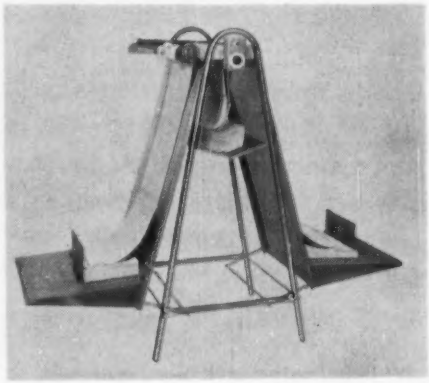
PATERSON PARCHMENT PAPER COMPANY
Bristol, Pennsylvania
Sales Offices: New York, Chicago
West Coast Plant: Sunnyvale, California
Headquarters for Vegetable Parchment Since 1885

For More Information Circle No. 352

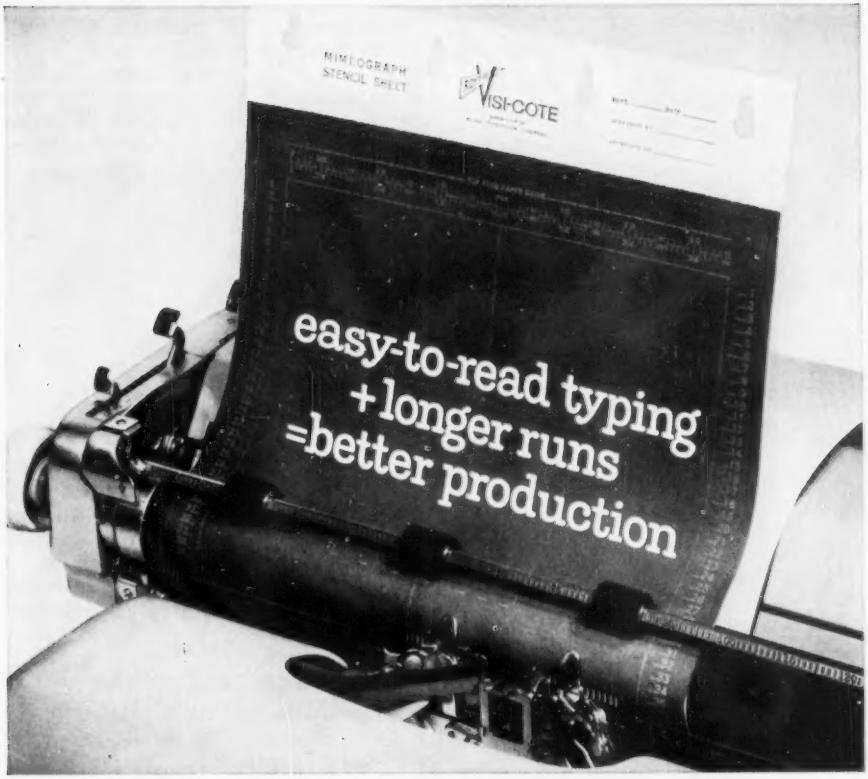
proofs and paste-ups. The Check-scale has a 17″ x 11″ ⅛″-grid printed on .005 Mylar-base film which has dimensional stability; will not curl, warp or discolor. It takes pencil and erasing. Retails at $4.95. **For More Information Circle No. 109.**

FORMS SEPARATOR

Standard Register Co., Dayton 1, Ohio, announces the Form Flow Vertical Separator, a motor-driven unit which operates independently of the forms writing machine, and is designed for quick, easy operation and economy. It guides one part of a multipart forms set down one side and the remainder of the set down the other, while disposing of the carbon. Loading the unit is accomplished in a matter of seconds and it will accommodate a stack of forms 12″ high. Guide chutes and refold trays are



adjustable to various angles and will take any weight paper and carbon. The Separator handles a maximum form width of 17-25/32″ and a length of 17″ at speeds up to 350 feet per minute. Sturdily constructed of chrome steel tubing and heavy gauge sheet steel with painted parts finished in baked gray, the Form Flow Vertical Separator is 55″ high, 30″ wide and 59″ long, weighs approximately 100 lbs. Equipped with a 110-volt AC-DC motor with variable speed control and an on-off rheostat. **For More Information Circle No. 177.**



NEW ROYTYPE VISI-COTE STENCIL

Here it is—the plastic-coated duplicating stencil—specially developed for:

• ease of reading • clarity of copy • extra strength for heavy duty • longer runs • economy

Your Roytype Representative can show you how you can improve your office production with the new VISI-COTE—call him soon. For FREE TRIAL SAMPLE, just fill out and mail this coupon today.

ROYTYPE®

ribbons, carbon papers, quality supplies for all business machines.

ROYTYPE, Royal McBee Corporation
Westchester Avenue, Port Chester, N. Y.

Please have your Roytype Representative bring me a Free Sample of your new VISI-COTE Stencil.

Name_____ **Title**_____

Company_____

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Product of Royal McBee Corporation, World's Largest Manufacturer of Typewriters.

For More Information Circle No. 413

A MODEL FOR EVERY PURPOSE

Tell your story better with an Oravisual easel. You have 26 models to choose from. Write for free 24 page catalog.

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For More Information Circle No. 395

MANUFACTURERS OF DURALUMINUM
MANY STYLES **HOLDERS** FOR HANDWRITTEN SNAPOUT FORMS
SAUNDERS MFG. CO., INC.
P. O. BOX 243
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For More Information Circle No. 325

NIPPO
CHECK WRITER
Indelibly prints
Just the same as a big machine costing up to $500.—

NIPPO MACHINE INDUSTRY CO., LTD.
Tenjin-cho-Nishi-ku, Yokohama, Japan

For More Information Circle No. 326

FREE DIES AND PROOFS
GENUINE ENGRAVED **LETTERHEADS** $15.00 FOR 1000
Genuine ENGRAVED **BUSINESS CARDS**
500 $11 • 1000 $15
BUSINESS ANNOUNCEMENTS 500 ONLY $28
CLIP YOUR LETTERHEAD TO THIS AD... MAIL FOR FREE PROOF
MANUSCRIPT COVERS $3.00 FOR 100
DEWBERRY ENGRAVING CO.
807 SO. 20th ST., BIRMINGHAM 5, ALABAMA

For More Information Circle No. 327

FILE FOLDER LABELS

Dennison Mfg. Co., Framingham, Mass., makes Pres-a-ply file folder labels which allow using file folders longer because bright new labels cover old headings neatly. The labels have pressure-sensitive gumming and are applied without moistening. There

is a color band at the top of each Dennison Pres-a-ply file folder label. Nine colors are available for file index coding: white, cherry, blue, salmon, green, orange, buff, manila, canary. The labels are packaged 248 to a box at the suggested retail price of $1.10. **For More Information Circle No. 145.**

PHONE TOLL METER

Efficiency Corp., 1035 G St., San Diego 1, Calif., announces the Tell-A-Toll which automatically indicates the charge of tele-

phone toll calls, incoming or outgoing. A rate dial is set for the three-minute base rate and a moving arrow indicates the call's cost as long as the parties are connected, up to 15 minutes. This allows the

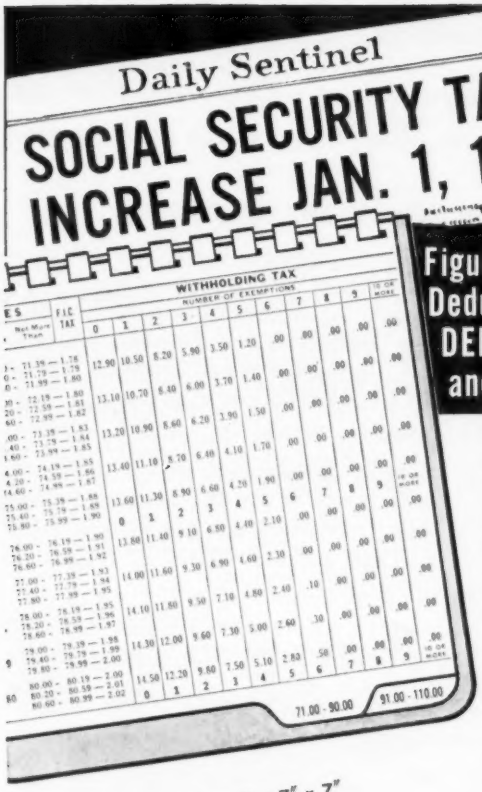
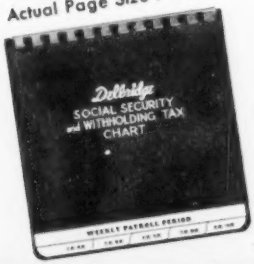


Figure NEW Payroll Deductions with Famous DELBRIDGE Social Security and Withholding Tax Charts!

Effective January 1, 1959, increased social security tax deductions must be made from employees' earnings. The revised DELBRIDGE Social Security & Withholding Charts feature these new deductions *plus* withholding taxes. Deductions are *pre-calculated* and on one line for *quick*, *easy* and *accurate* recording. No other method offers so many advantages:

- **Faster than machine or hand figuring!**
- **Practically eliminates computing errors!**
- **Simple, easy to use!**
- **Four separate editions cover all payroll periods: weekly ($1.00 to $550.00); bi-weekly ($1.00 to $1050.00); semi-monthly ($1.00 to $1050.00); monthly ($1.00 to $1300.00).**

Actual Page Size 7" x 7"



DELBRIDGE CALCULATING SYSTEMS, INC.

Pre-Calculated Tables for Business & Industry Since 1890

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FREE 10-DAY TRIAL!

DELBRIDGE Calculating Systems, Inc.
2510 Sutton Ave., St. Louis 17, Mo.

Without obligation, send the 1959 DELBRIDGE Social Security & Withholding Tax Charts indicated below. If we keep the charts, we'll "O.K." your invoice at the rate of $3.50 for each copy.

Company Name.....

Street Address.....

City..... Zone..... State.....

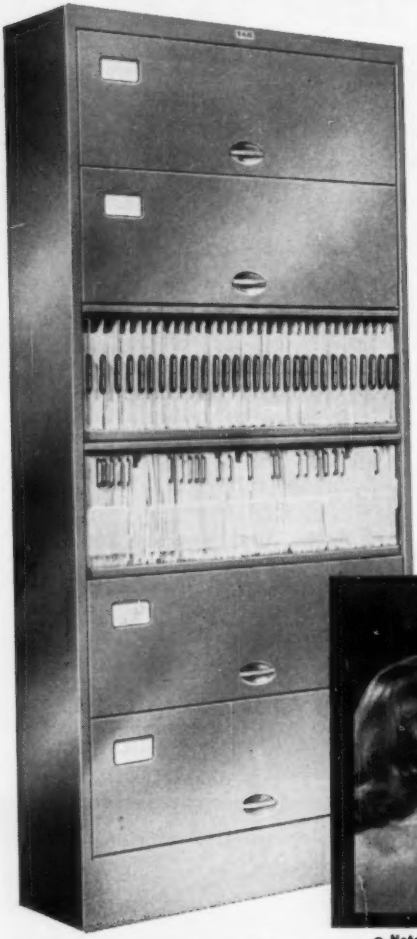
(Specify quantity wanted and payroll period, here)

.....

For More Information Circle No. 404

SPACEFINDER FILES...

...HAVE PROVEN, in hundreds of offices, that they can SAVE YOU 50% or more in filing time, space and money!



Spacefinders are an appearance asset to any office—available in a wide range of sizes.

ONLY SPACEFINDERS...

offer you these exclusive advantages.

1 Welded cabinet of Spacefinder is designed specifically for MAXIMUM FILING EFFICIENCY. It is *not* an adaptation of shelving!

2 Spacefinders are complete and ready to use. When you move or change your department, you can MOVE THIS RUGGED FILE WITH CONTENTS INTACT!

3 Optional doors give DUST, DIRT and FIRE PROTECTION, serve as handy pull-out work shelves, and can be provided with locks.

● Note visibility and availability of thousands of records.

Send today to Tab Products Co., 995 Market Street, San Francisco 3, for 24-page brochure, and name of our local representative for skilled help in showing you how to save filing time, space and money

TAB
PRODUCTS CO.

For More Information Circle No. 392

party who is paying for the call to end it before the charge goes higher than the call is worth from a business viewpoint. The Tell-A-Toll requires no installation. It has a stand to hold the phone. Costs $39.95 or $2 monthly on rental-purchase plan. Is said to have reduced toll call bills from 25% to 33%. **For More Information Circle No. 143.**

FLANNELBOARD

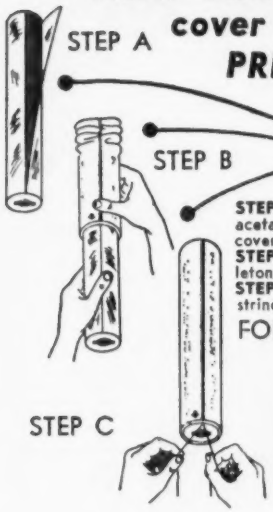
Arlington Aluminum Co., 19007 W. Davison, Detroit 23, Mich., makes a black flannelboard visual aid accessory for use with the Arlington 5-Way Presentation Easel for slapboard presentations. Props are simple to prepare and give a three-dimensional effect. Newspaper clippings, photographs, cut-outs of cloth or construction paper, pamphlets and individual letters, numerals or words may be used with pieces of sandpaper glued to the backs. The nap on the flannel causes the sandpaper to adhere. The Arlington flannelboard accessory is constructed of 12-oz. heavy woven black flannel, hemmed-edges, and aluminum reinforcing at top, 28½" x

38½" and lies flat on the Arlington 5-Way Easel. Two holes 17½" apart through flannel and aluminum reinforcing have ⅜"

MULTILITH OPERATORS

NOW YOU CAN CUT COSTS up to 50%

cover your own dampening rolls with PRESEWN TRI-MOL molleton covers



IN 5 to 10 MINUTES ANYONE IN YOUR OFFICE can put on their own dampening roll TRI-MOL Molleton covers. It's as easy as A-B-C (see illustrated steps at left). Send in your order today or write for more information.

STEP A — Wrap acetate (sent with cover) around roller
STEP B—Slide TRI-MOL Molleton cover (as shown) onto roller.
STEP C — Tie ends and cut excess string THAT'S ALL THERE IS TO DO!

FOR ALL MULTILITH & DAVIDSON PRESSES

For further information, write:

ROLL-O-GRAPHIC CORP.
133 Prince St., New York, N. Y.

DEALERS AND DISTRIBUTORS INQUIRIES INVITED

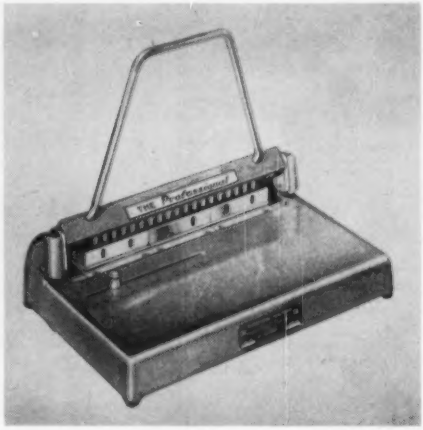
For More Information Circle No. 333

For More Information Circle No. 320

brass eyelets to fit under the easel's clamp bar. Shipping weight 2 lbs. **For More Information Circle No. 161.**

PLASTIC BINDING PUNCH

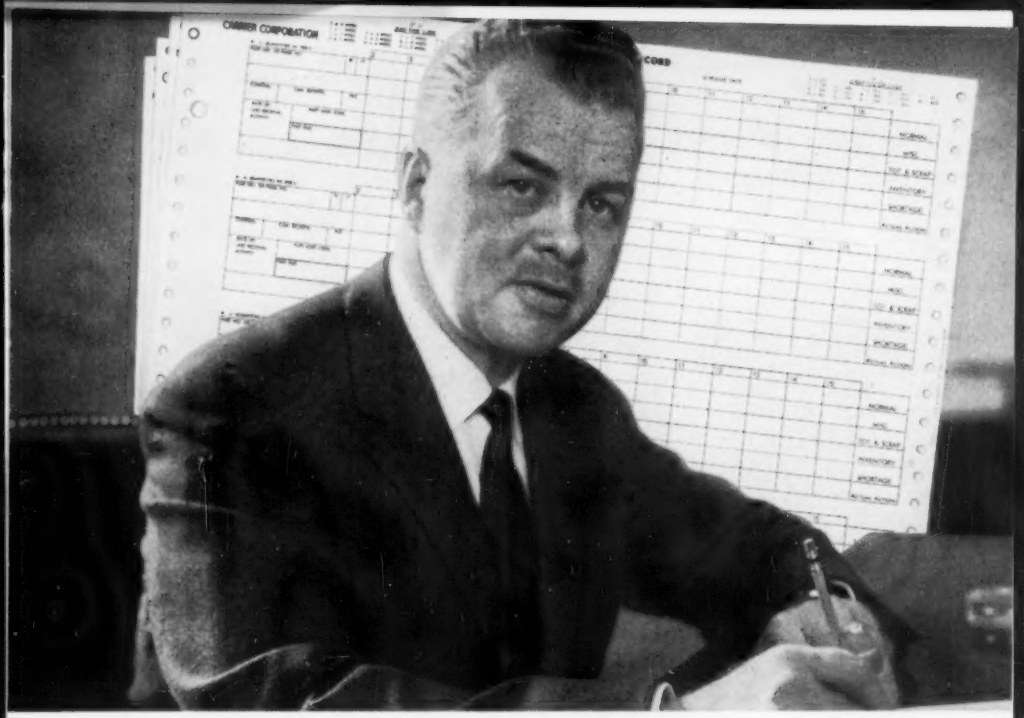
General Binding Corp., Dept. 0118, 1101 Skokie Highway, Northbrook, Ill., has added the low-cost portable Model 12-P Professional, to its extensive line of GBC Plastic Binding equipment. The Professional has a full 11″ of punching dies and open ends to allow punching any sheet regardless of size. It features a positive fixed back guide, standard 19-ring



setting, automatic die return and oversize punching dies for high performance and trouble-free precision punching for GBC GEB-ring (metal loose leaf) and Slide-Ring (plastic loose leaf). The versatility of GBC products makes it possible to interchange sheets from one style of GBC binding to another in a matter of minutes. For an attractive Plastic Binding Guide as well as further information, **Circle No. 123.**

DESK SHELF COVER

D. C. Hey Co., 2108 Nicollet Ave., Minneapolis 4, Minn., makes the Viso-Deskplate, a clear, heavy gauge, hinged plastic sheet to cover and keep clean schedules, calendars, lists, etc., on pull-out desk shelves. A self-sealing hinge across the back keeps Viso-Deskplate in place and



Melvin C. Holm, Vice President and Treasurer, Carrier Corporation

"Moore forms helped us cut inventory"

CONTROL SPEEDS CARRIER MARKET FORECASTS, PLOTS PRODUCTION FOR ON-TIME SHIPMENTS

A new Planning and Production Control System gives Carrier Corporation a competitive edge by speeding shipment of its air conditioning units. Sales forecasts—the first stage of production planning—are faster and closer to the market picture with scientifically designed forms that organize and expedite paperwork. Determining material and manpower requirements follows the forecast.

Next a Parts Requirement Record, run off from punched cards and using an IBM 650 computer, schedules quantities of components and completion dates. Parts arrive on staggered schedule for uninterrupted work flow. The Record is a 4-part Moore Speediflo continuous form. It is the company's control in print.

Automated control keeps inventories to a minimum and reduces warehouse footage. It has released capital for other uses and reduced seasonal loan requirements. Overproduction is less likely since forecasts are up-to-date. Slowdowns caused by late or missing parts are minimized. Earlier deliveries can be promised—and met.

The Moore man helped in scientific design of procedures and forms tailored to this Automated Data Processing (ADP) system. For more examples of form-system improvement, write on your letterhead to the Moore office nearest you.

MOORE BUSINESS FORMS, INC., Niagara Falls, N. Y., Denton, Tex., Emeryville, Calif. Over 300 offices and factories throughout U.S., Canada, Mexico, Caribbean, Central America.

MOORE ®

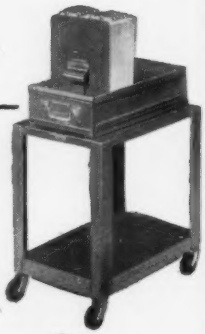
Build control with

MOORE BUSINESS FORMS

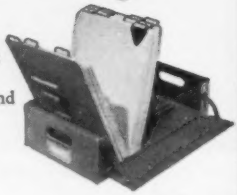
For More Information Circle No. 421

P.E.C. "MATIC"

POSTING EQUIPMENT
INCREASES
OFFICE
EFFICIENCY
AUTO'MATIC'ALLY



DUO-MATIC
POSTING TRAYS AND STANDS . . . Tray models for sheet sizes from 7" x 11" to 12" x 12". Stands available in skeleton, fully enclosed or with Filing Drawer.



PORTA-MATIC
Trays available in 12", 14¾", 18", and 23¾" lengths and ten widths from 5" to 17". Lightweight . . . Portable.

TILT-O-MATIC
Five sizes for all standard register and sales book forms.

V-MATIC Tray
Ideal housing for writing board and machine accounting records requiring small capacity. Eight sizes.

Write today for our new, complete catalog.

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MEAD-LEE *Associates*
SOLE DISTRIBUTORS FOR
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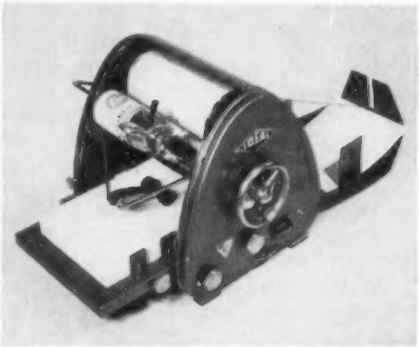
Canadian Representative:
J. J. Carter Agencies, 901 Yonge St., Toronto 5, Ont.
For More Information Circle No. 351

permits quick change of material underneath. Sheets lie flat and stay in place without taping to shelf. Viso-Deskplate also provides a smooth surface for writing.

Standard 12½" x 15" size fits over 95% of desk shelves. Also made in a range of special sizes from 10" x 10½" to 17" x 21". **For More Information Circle No. 126.**

STENCIL DUPLICATOR

American Office Equipment Co., 24 East 21st St., New York 10, N. Y., announces the new Ideal Electric Stencil Duplicator



which has a variable speed motor adjustable from 40 to 140 copies a minute. A semi-automatic inking device uses a sealed cartridge of ink which makes for com-

Vari-Typer THE MACHINE WITH 1,000 FACES

LOOKS LIKE A TYPEWRITER
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2 TYPE FONTS IN USE AT ONE TIME 2 SECONDS TO CHANGE

A FEW OF THE MANY STYLES AVAILABLE

- Script Styles
- **Bold Face Types**
- Light Line Types
- Garamond Styles
- *Matching Italics*
- Sans Serif Styles
- *Matching Italics*
- Fractions 7/8 12/32
- COPPERPLATES
- Monastery Type
- Alexandria Styles
- Bookman Styles
- *Matching Italics*
- Bodoni Styles
- *Matching Italics*
- **Matching Bold**
- **Symbols** ☙□■●▲☙
- Condensed Styles
- Modern Roman
- LARGE TYPES
- SMALL TYPES

Your office typist can give you professional-looking 'type proofs' for forms, reports, bulletins, catalogs, manuals, etc. – for reproduction by any method you use. *Vari-Typer* – with its great variety of type styles, even margins, exact spacing – makes it possible for even the simplest of office duplicators to produce a fine, professional-looking print-job. Savings are enormous and you will always have a plentiful supply of printed material available.

(Copy by Vari-Typer. Heads by Headliner.)

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For Full Information, Fill in Below, and

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ADDRESS.....
CITY.....ZONE....STATE.....

MAIL THIS ENTIRE AD TO
VARI-TYPER CORPORATION **Dept. D-112**
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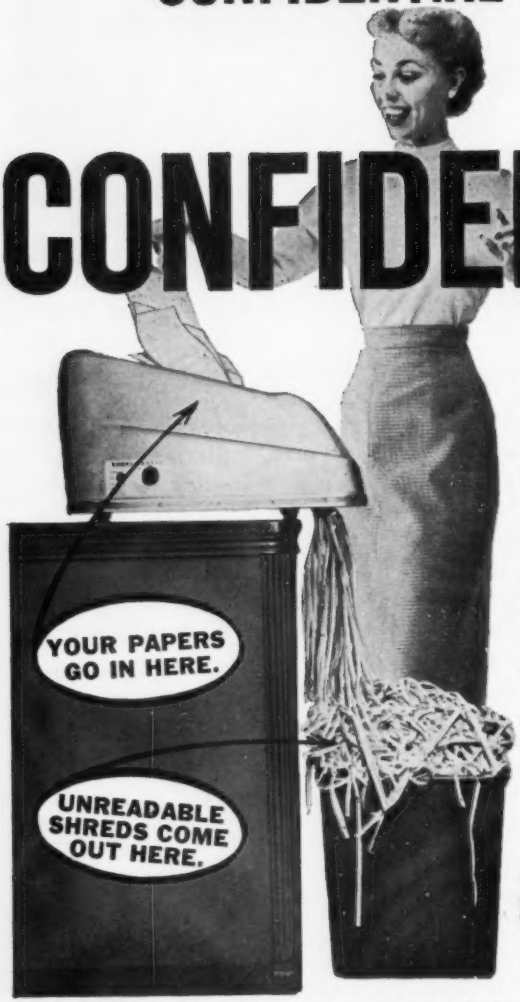
For More Information Circle No. 416

NEVER BEFORE SO SAFE, SO SURE A WAY TO KEEP CONFIDENTIAL PAPERS—

CONFIDENTIAL



Keep your confidential papers and records from the prying eyes of unauthorized persons by quick, easy destruction right in your own office with the SHREDMASTER Bantam 10. Anyone can operate. Just drop papers in and unreadable shreds come out. Exclusive gravity feed provides quicker shredding. Gives greater capacity by shredding multiple thicknesses of paper. Handsome, modern design and clean, noise free operation suitable to any office. Yours at a new low price.

FREE: Illustrated descriptive folder giving details of 10 Day Free Trial. Just write today to

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and ask for Circular 53.

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Manufacturers of the Clipper 14, only heavier duty shredding machine suitable for office use. Sales and Service in principal cities in U. S. and Canada.

For More Information Circle No. 429

pletely clean duplicating. Two rubber ink rollers provide even ink distribution. The precision built, heavy duty machine has built-in strippers and takes paper sizes from postcard to 8½" x 13½". List price is $325. **For More Information Circle No. 168.**

PAPER FASTENERS

Vail Mfg. Co., 900 East 95th St., Chicago 19, Ill., has redesigned the packaging of its Monarch line of pins, clips, fasteners and staples. The new polka dot packaging was designed by Morton Goldshall Associates, Chicago, and involves color-keying each package according to its contents. An illustration of the product is featured on the cover and on the end of each box, with the product number and quantity. This, together with color-keying, makes for quick and easy identification. Vail is merchandising the packaging in conjunction with its new self-service fastening center. This is a combination merchandising, stocking and display unit for the complete line of Monarch fasteners and provides a

complete stock of products to sustain the 30-day sales requirement of an average dealer. It was designed particularly for the stationer who lacks both display and stockroom space. The display, conservatively valued at $15, is free with purchase of

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has the machine you want, when you want it—as you want it!

Choose from the world's largest selection of SELECT ROUGH and REBUILT Office Machines.

Most every famous make and model can be yours at savings from 40% to 60%.

Rebuilt Machines—Guaranteed to LOOK and PERFORM like new.

Select Roughs-machines complete as to parts and in operating condition for quick reconditioning and sale.

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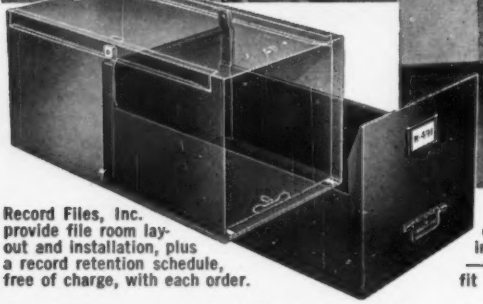
WOrth 2-3200
Cable: "ADDBOOKAL"

For More Information Circle No. 430

EXPANSION PLANNING WITH RFI STEEL RECORD FILES...

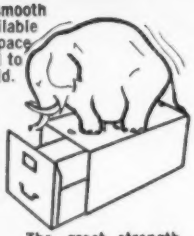
A cluttered cardboard storage room such as this, is a costly waste of space and employee time that you can't afford.

Nylo Glide record files save 40% or more in valuable floor space and the accessibility of RFI files saves you valuable employee time.



Record Files, Inc. provide file room layout and installation, plus a record retention schedule, free of charge, with each order.

These nylon bearing smooth operating files are available in any size. No waste space —inside or out. Designed to fit the records they hold.



The great strength of Nylo-Glide files will not allow them to bulge or sag under a great load or pressure.

Nylon bearings prevent binding, cause drawers to work easily while under heavy load.

RFI brings you EXPANSION PLANNING. Each RFI file is a single basic unit and may be combined to go as high or as wide as you wish. Files can be added as you need them.

RECORD FILES, INC.
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Please have your nearest representative stop and see us at his convenience.

Name _____

Address _____

City _____ State _____

RECORD FILES, INC.
P. O. BOX 581
WOOSTER, OHIO

For More Information Circle No. 420

the complete line of Monarch fasteners, at a special package deal price. **For More Information Circle No. 179.**

CALENDAR DESK PAD

Doolittle & Co., 320 N. Dearborn St., Chicago 10, Ill., makes the Doolittle Cal-A-Noter with space for regular day-by-day memoranda and a permanent record of contacts, addresses and phone numbers for use in the office or on the road. Easily carried in briefcase or pocket, the Cal-A-Noter can be one's basic personal reference. Arrangements can be made by dealers to have their imprints included on quantity orders, or have imprints of customers included. The Cal-A-Noter is bound in vinyl plastic in a variety of colors. **For More Information Circle No. 163.**

BEGINNERS' TYPING COURSE

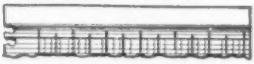
Smith-Corona Marchant, Inc., Syracuse 1, N. Y., offers a touch typing course consisting of a printed text with keyboard charts and two 12" LP records. The audio visual record course will be distributed free to purchasers of Smith-Corona portables or it may be purchased separately

for $23.95. The course was developed by the education department of Smith-Corona after collaboration with leading typing authorities. Approval of Dr. John L. Rowe, chairman of the business education department at the University of North Dakota, and author of typing textbooks, appears on the course album. Pretesting indicates that a beginner who is reasonably faithful in completing the lessons can master touch

• LEDGER SHEETS

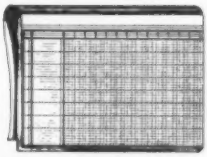
Pen ruled and printed both sides on 28 lb. White (25% rag) Ledger.

• COLUMNAR SHEETS



Pen ruled and printed both sides. Single & Double Page Forms. Numbered lines.

• COLUMNAR PADS



On #16 Buff Sulphite. Also available for ring binders.

FREE Catalog & Price List.

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THE NATIONAL MANIFOLDING CO.
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For More Information Circle No. 354

IT'S VISIBLE

MODEL 41C CARBON COPIES NUMBERING MACHINE

Will make up to 12 good carbon copies.

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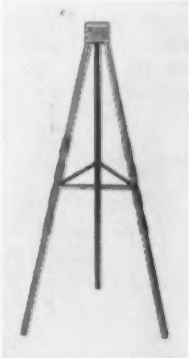
ATLANTIC AND SHEPHERD AVENUES
BROOKLYN 8, NEW YORK
BRANCH—105 W. MADISON ST., CHICAGO 2, ILL.

For More Information Circle No. 355

typing fundamentals and acquire typing speeds up to 40 wpm in the allotted ten-day period. The course familiarizes the beginner with the typewriter and instructs him in the touch system for personal typing, but it does not attempt to train an individual for commercial typing, nor does it substitute for formal courses in business education or secretarial training. Originally conceived with adults and teenagers in mind, the company's pretesting showed it is equally effective for children as young as eight and nine. **For More Information Circle No. 175.**

EASEL

Oravisual Co., Box 11150, St. Petersburg 33, Fla., offers a Bantam Easel made of aluminum with nothing to assemble or come apart. Three sets of chart holders are permanently hinged to the front legs to support charts or signs at three heights. Has rubber feet to protect floors. Folds



flat. Costs $17.50. **For More Information Circle No. 182.**

PROTRACTOR TRIANGLE

Alvin & Co., Windsor, Conn., offers an 8″ fluorescent adjustable protractor triangle. The right triangle permits drawing angles from 0° to 90° direct from the base line. The protractor element has two rows of graduations: one indicates angles from 0° to 45°, the other indicates angles from 45° to 90°. Angles may be set to with-

The Business Game goes smoothly when moves are signalled by

In regular 100-Pack. And in handy 20-Pack Plastic Boxes.

GEORGE B. GRAFF COMPANY
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For More Information Circle No. 356

NOW...
your mail
packages
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TIED 10x FASTER

Anything you now tie by hand, you can tie *up to ten times faster* on a famous Bunn Tying Machine. Operates automatically to give you a tight, uniform tie . . . in two seconds or less! Mail bundles, parcels, advertising literature, house organs, reports — whatever the tying job may be, machine-tying by Bunn can save you up to 54 minutes out of every hour currently spent on old-fashioned hand tying. Think what speed like this can mean to the efficiency of your operation.

Check these 5 money-saving features

Automatic adjustment to any size or shape without manual changeovers.

Controlled tension prevents cutting into product . . . can't slip off . . . reduces package breakage and product damage.

No Waste: Automatically uses just the right amount of twine.

Slip-proof knot can't come undone even with rough handling . . . approved by postmasters for mail tying of all kinds.

Simple operation is fatigue-less . . . beginners become experts in minutes.

Mail the coupon today. Learn for yourself why . . . *almost anything which can be tied by hand can be tied faster, better and more economically.*

PACKAGE TYING MACHINES — SINCE 1907

BUNN

B. H. BUNN COMPANY

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7645

MAIL THIS COUPON NOW

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Please send free booklet which illustrates the many advantages of Bunn Tying Machines.

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Company _____

Address _____

City _____ Zone ____ State _____

For More Information Circle No. 418

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CONVOY "Chem-Board"*

RIGID, PERMANENT, INEXPENSIVE

record storage FILES

Chem-Board Storage Files are permanent. They cost and weigh about 50% less than steel; cost less than some corrugated paper files. They're shipped assembled, ready for use.

NOW—smooth, staple-free fronts make them suitable even for "front-office" use.

Available in letter, legal, check, deposit slip, tab card and many other sizes.

*CHEM-BOARD IS RIGIDIZED CORRUGATED BOARD PROCESSED TO REMARKABLE STRENGTH.

CONVOY, Inc.
STATION B, BOX 216H
CANTON 6, OHIO

For More Information Circle No. 431

SORT-O-FILE

Reg. U.S. Pat. Off.

SAVES 20% TO 60% TIME

30 Models. Systems Sorting Service

THOUSANDS IN USE

For fast hand-sorting of cards, checks, letters, invoices, orders, business forms or public documents. For collating on the new **Col-A-Tron.** Write for illustrated circulars.

Since 1946

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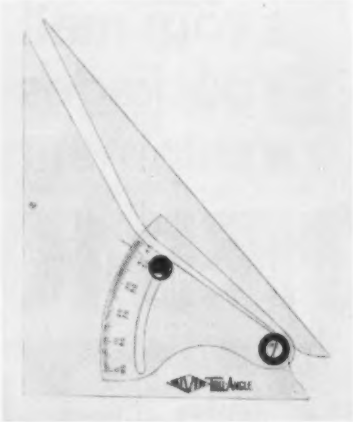
Associated Industrial Designers
P.O. Box 39652, Los Angeles 39, California
Plant: 1250 East Sixth Street
Warehouse: New York, Chicago

For More Information Circle No. 433

in one-half degree with accuracy. The fulcrum point has an aluminum screw post to insure firm movement. The adjustment arm is held firmly when at any angle by a knurled knob which also



serves as a handle for easy pick-up and manipulating. Each protractor triangle comes in a polyethylene sheath, individually boxed for $4.85. **For More Information Circle No. 165.**

MICROFILM CARD MOUNTS

Remington Rand Div., Sperry Rand Corp., 315 Fourth Ave., New York 10, N. Y., announces Snap-Jacks for mounting individual microfilm images in a filing card.

A filmed document can be removed from a roll of film and inserted into the Snap-Jack pocket which in turn snaps into any

DAVIDSON SUPPLIES CATALOG

explains how Laboratory Control

ASSURES QUALITY OFFSET

● DAVIDSON CORPORATION, pioneer in the simplification of offset operation, wants to send you a free copy of its latest Supplies Catalog—one of the most informative ever prepared by an offset equipment manufacturer.

The Catalog explains how Davidson Supplies are "Laboratory-Controlled" to assure consistently fine quality offset on every job you run. You'll find scores of new products in the Catalog, including a full line of plates, platemaking equipment, operating supplies, blankets and a host of production attachments. You'll also be interested in the illustrations and descriptions of the Davidson Embee folding machines and ProType.

Davidson

DAVIDSON CORPORATION
A Subsidiary of Mergenthaler Linotype Company
29 RYERSON STREET, BROOKLYN 5, NEW YORK
Distributors in all principal cities and Canada

SEE PROTYPE DEMONSTRATION

Davidson's ProType, the simplest method for setting display type and headlines photographically, produces quality typography quickly, at low cost. Over 10,000 type styles and sizes are available, 6-90 point. Check coupon for demonstration.

Headings in Protype • Text in Linotype

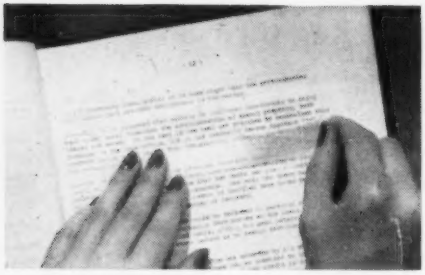
DAVIDSON CORPORATION 0-11-8
29 Ryerson Street, Brooklyn 5, New York

☐ Send Supplies Catalog
☐ I'd like a ProType demonstration

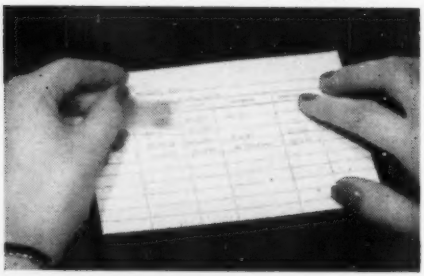
Name_____
Firm_____
Street_____
City_____ Zone____ State____

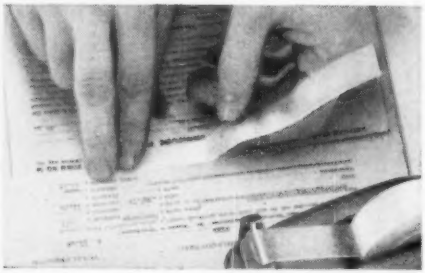
For More Information Circle No. 419

Splice in revisions..... Make repairs



Protect papers..... Attach riders





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REG. U.S. PAT. OFF.
SCOTCH BRAND **810 Magic Mending Tape**

It works wonders in the office! "SCOTCH" 810 Magic Mending Tape sticks at a touch...never cracks, clouds or bleeds adhesive...practically disappears on contact with paper. What's more, you can write on it with pen, pencil or typewriter. Save yourself time and trouble —try "SCOTCH" 810 Magic Mending Tape in *your* office.

"SCOTCH" IS A REGISTERED TRADEMARK FOR THE PRESSURE-SENSITIVE ADHESIVE TAPES OF 3M CO., ST. PAUL 6, MINN. EXPORT: 99 PARK AVE., NEW YORK 16. CANADA: LONDON, ONTARIO.

MINNESOTA MINING AND MANUFACTURING COMPANY
...WHERE RESEARCH IS THE KEY TO TOMORROW

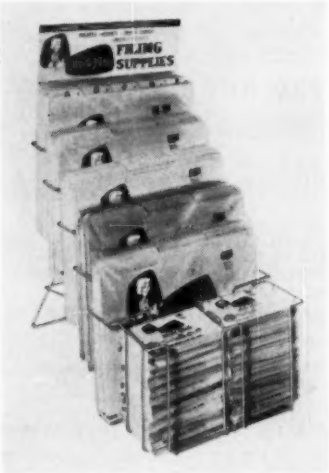
3M COMPANY

For More Information Circle No. 452

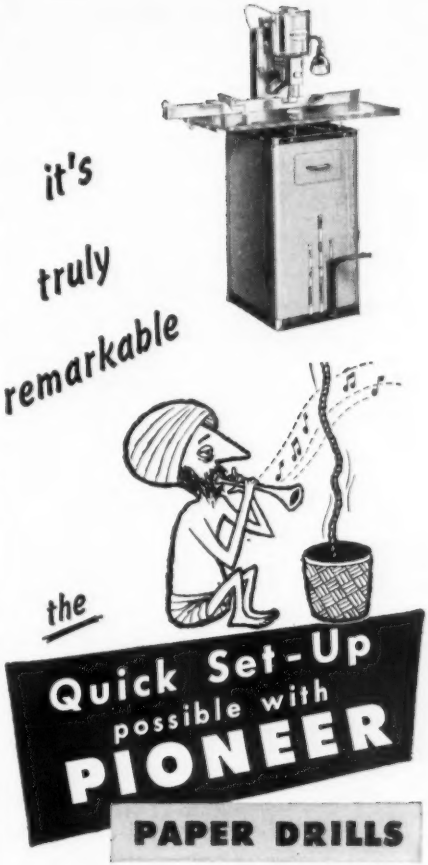
type of filing card with a pre-cut aperture for 16 mm, 35 mm or 70 mm film. Facing pieces of tri-acetate on the top and bottom edges are snapped into place on the top and bottom edges of the aperture in the card. The remaining area of the card provides space for data. The apertures are positioned at right or left on the card, so that successive cards may be filed with the filmed images in alternating positions to eliminate excessive build-up on one side in the file. The Snap-Jack card is easily slipped into a Kard-A-Film reader for reference. For samples, **Circle No. 164.**

FILING SUPPLIES

Imperial Methods Co., 750 S. Circle Ave., Forest Park, Ill., announces a counter display merchandiser for their Pic-a-Pack line of poly packed, self-service filing supplies. The compact wire rack merchandiser is free with a starter order of Pic-a-



Pack file folders, guides, index cards and card guides. Packaged in convenient dozen packs, line has been designed specially for the small quantity buyer who can now serve himself from the counter merchandiser. In addition to manila, the Pic-a-Pack line offers file folders in pink, turquoise and yellow. **For More Information Circle No. 180.**



It doesn't take a production genius to operate this high output driller. With its quick, simple setup and extreme ease of operation short runs are not a headache but a special delight. Handles a full range of round holes required for post and ring binder forms, with attachments for cornering, slotting and slitting available.

Write for literature now.

PIONEER

1130 Nebraska Ave. • Toledo 7, Ohio

For More Information Circle No. 382

TELEPHONE INDEX

Bates Mfg. Co., Orange, N. J., makes the Secretary, a low priced telephone index that features the wide card of more ex-

pensive models. Its introduction increases the Bates line of telephone indexes to seven models and 38 finishes. The Secretary retails at $1.95. It is smartly designed to fit either office or home decor and comes in three finishes: walnut with gold trim, birch with silver trim, green with gold trim. The cover is styled with rounded corners and features all metal construction. Like other Bates models, the Secretary has a wide, easy-to-operate opening lever which releases the lid as soon as it is touched. It also has a protected recessed channel for the alphabet listing. The wide cards provide for over 1300 listings. **For More Information Circle No. 181.**

FILE DRAWER

Steelcase, Inc., 1120 36th St., Grand Rapids, Mich., makes the V File Drawer designed to provide maximum filing visibility. The drawer utilizes adjustable blocks manipulated by side tabs to form the V that puts filed material readily at hand and in easy view. Even after the drawer is closed, the V is retained, permitting easy refiling when material is replaced. Steelcase V blocks do not sacrifice the filing

TELE-REST frees the hand that holds the phone!

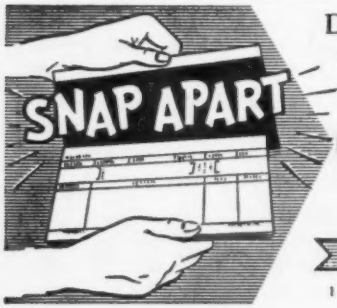
TELE-REST, the attractive and efficient telephone accessory featuring:

- Complete adjustability for right or left shoulder use.
- Holder to fit all popular receivers.
- Easy installation
- Natural rubber cushioning inserts
- Black or nine colors
- AND a budget-wise price.

Tele-Rest

At your nearest stationers, or write H. H. Renneker Co., Inc. P. O. Box 9235, San Diego 9, California

For More Information Circle No. 403



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Increase Efficiency, Reduce Costs

Sold through our Dealers only . . .

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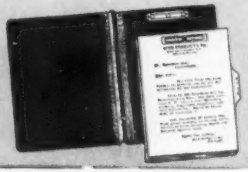
1600 E. 26TH STREET • LITTLE ROCK, ARKANSAS

Chasing the letter, invoice or other paper you want is neither efficient nor profitable — and totally unnecessary if you file by the ACCO method. Let your Stationer brief you on Accobind Folders, Accopress Binders and the Acco System for keeping papers in order and *safe*. See him today — and stop playing "Hare and Hounds" with your files.

"ACCO BOUND PAPERS ARE SAFE PAPERS"

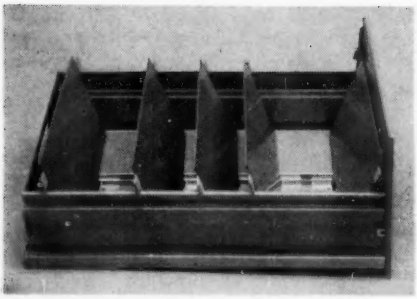
ACCO PRODUCTS
Division of NATSER Corporation
Ogdensburg • New York
In Canada: Acco Canadian Co., Ltd., Toronto



For More Information Circle No. 417

‡Patent Applied For *Ban-Lon is a registered trademark of Jos. Bancroft & Sons Co.

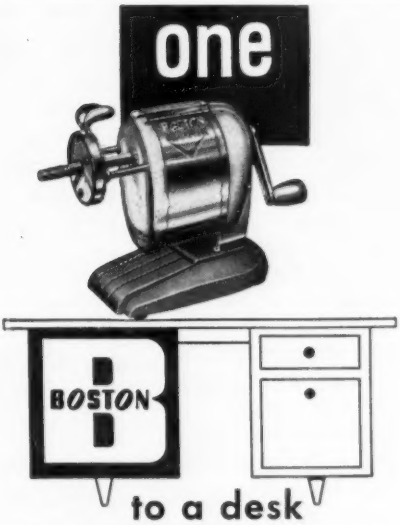
For More Information Circle No. 292



capacity. There is no mechanism to malfunction and cause costly repairs. Drawers feature progressive suspension and a choice of colors at the same price as regular Steelcase suspension files. **For More Information Circle No. 178.**

PERFORATED TAPE READER

ElectroData Div., Burroughs Corp., 460 Sierra Madre Villa, Pasadena, Calif., makes a perforated paper tape reader which operates at 1000 characters a second. Delivery of this Burroughs product is quoted as four months after receipt of order. It photoelectrically reads the tape information into control and computer systems requiring programmed data and is used as an input unit with the Burroughs 220 electronic data processing system. Despite its rapid reading rate, the Burroughs photoreader will stop on a single stop-character in a little more than a thousandth of a second. It will read the next character within five milliseconds of re-initiation of the read operation. May be adapted to any standard-width commercial tape, from five to eight-level code. Tape is fed from plastic reels which also provide inexpensive tape storage. Two



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PORTABLE PENCIL SHARPENER

4 DECORATIVE COLORS
green-blue-sandtone-gray

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- less than 1½c a day for one year with long life ahead

Send for free comprehensive report on sharpeners, Booklet N.

C. HOWARD HUNT PEN CO., Camden 1, N.J.

BOSTON PENCIL SHARPENERS

For More Information Circle No. 357

ATLAS
VERTICAL FILING
SYSTEMS

- FAST
- EFFICIENT
- ECONOMICAL
- SAFE

FOR
NEGATIVES • OFFSET PLATES
STENCILS • SKETCHES • ARTWORK
MASTERS • X-RAYS

ATLAS CABINETS

Complete line of models for negatives, plates, stencils, etc. up to 21" wide. Capacities up to 1,400 pieces. Wide range of sizes up to 26" wide, 52" high, 28" deep.

ATLAS HANGERS

Over 20 types and sizes, a complete patented line. Lug, spring-clip and envelope types to fit every need.

At Quality Equipment Dealers Everywhere—Specialized Model at Addressograph-Multigraph Agencies

Write for Complete Catalog

ATLAS STENCIL FILES CORP.
16716 Westfield Ave. • Cleveland 10, Ohio

For More Information Circle No. 343

sizes of reels hold tapes of 350 or 700 ft. containing 40,000 or 80,000 characters. Up to ten photoreaders may be used on-line with any control or computing system. Automatic rewind and end-of-tape sensing make for a minimum of operator intervention, and the photoreader features rapid, simple straight-line tape loading. Automatic reel braking and servo shutoff system prevents tape damage and loss of data in the event of power failure, tape breakage or other malfunction. Each component chassis of the unit is designed for mounting in standard 19" racks, allowing users maximum flexibility in incorporating the reader into their systems. The unit also may be ordered housed in a Burroughs 220 cabinet. **For More Information Circle No. 166.**

HANGING FILE FOLDERS

Smead Mfg. Co., Hastings, Minn., makes the Flex-I-Vision Hanging Folder line with tabs having a full 1" indexing exposure. It is available in both 2" and 3"

widths. The hanging folder is reversible for either front or back tabbing. Smead also makes a Pocket and Follow-up Folder as a part of this line. **For More Information Circle No. 183.**

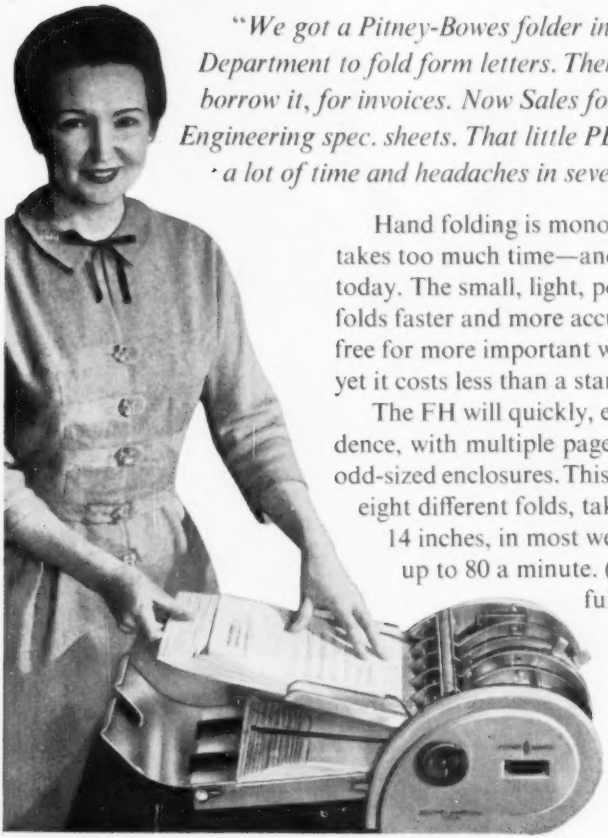
SECRETARIAL CHAIR

Lehigh Furniture Corp., 16 East 53rd St., New York 22, N. Y., offers its 1083 secretarial posture chair developed to harmonize with the modern light look in office

One FH saves

time for several departments!

"We got a Pitney-Bowes folder in the Advertising Department to fold form letters. Then Billing began to borrow it, for invoices. Now Sales folds price lists, and Engineering spec. sheets. That little PB folder is saving a lot of time and headaches in several departments."



Hand folding is monotonous, slow, takes too much time—and is unnecessary today. The small, light, portable Model FH folds faster and more accurately, leaves girls free for more important work, saves time—and yet it costs less than a standard typewriter!

The FH will quickly, easily handle daily correspondence, with multiple pages, stapled or loose, and with odd-sized enclosures. This semi-automatic folder makes eight different folds, takes sheets as large as a 8½ by 14 inches, in most weights and finishes—at speeds up to 80 a minute. (It's even faster with optional full automatic feed). Shows big savings, even with infrequent use. Ask the nearest Pitney-Bowes office for a demonstration. Or send for free illustrated booklet.

FREE! *Handy desk or wall chart of new postal rates with parcel post map and zone finder.*

The folder that costs less than a standard typewriter!

The larger model FM, fully automatic, can fold up to 19,000 sheets an hour.

PITNEY-BOWES

Folding & Inserting Machines

Made by the originator of the postage meter . . . offices in 107 cities.

NEW! *PB's 3300-FH combined folder-inserter folds and stuffs 500 bills, letters, etc. in envelopes in 8 minutes! By itself, the 3300 hooks onto any PB folder, or can serve as an inserter alone.*

PITNEY-BOWES, INC.
3413 Walnut St., Stamford, Conn.

Send free ☐ *booklet on PB folding and inserting machines;* ☐ *Postal Rate Chart*

Name _____

Address _____

For More Information Circle No. 432

"...compare ROL-DEX, Jr. with other small volume record handling equipment"

Pat. and Pats. Pending

ROL-DEX, Jr. has all the features!

— *Records roll to the seated clerk* —

Record Handling Features	*ROL-DEX, Jr.*	*Desk Side Rotary Files*
Greatest Accessibility	X*	
Fastest Reference Time	X	
No Record Rewriting	X	X
Greater Capacity	X	
No Electrical or Mechanical Servicing	X	

*At least 66% record exposure at all times for 8x5, 6x4, 5x3, or tab cards in Rol-Dex, Jr.

The Rol-Dex, Jr., is the smallest in the family of time and money saving ROL-DEX active record handling units. Send for more information to Dept. O-3, Rol-Dex Division,

WATSON MANUFACTURING Co., Inc. • Jamestown, New York

For More Information Circle No. 411

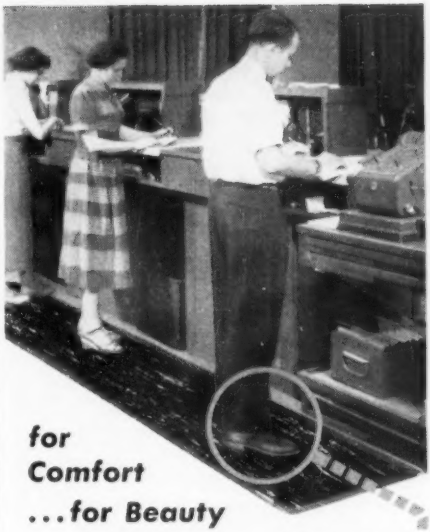
decor. The chair features a chrome wire strut foundation which presents a light, airy appearance. In addition, the 1083 features fatigue resisting resilient back construction, and a pivoting conformal back

rest which follows changes in body attitudes as well as providing the standard height adjustment. Retails at $110 with foam rubber upholstery in muslin. **For More Information Circle No. 159.**

NAMEPLATES

North Shore Nameplate, Inc., 214-27 Northern Blvd., Bayside, N. Y., makes Therma-Mark etched and anodized alu-

minum foil nameplates. The paper liner which protects the adhesive need not be peeled off, but releases itself at a touch.



for Comfort ...for Beauty ... for Years ... SPECIFY

HYGIENIC

Foot Comfort

MATS and RUNNERS

If you're tired of replacing foot mats that lose their resilience and appearance in a disappointingly short time . . . if you want a mat or runner that will give relaxing support and still look beautiful years after it was installed . . . use Hygienic *Foot Comfort* Mats, the quality floor mats that reduce fatigue and increase efficiency for all who must work standing. Available in 8 modern marbleized colors. All edges beveled for safety and appearance.

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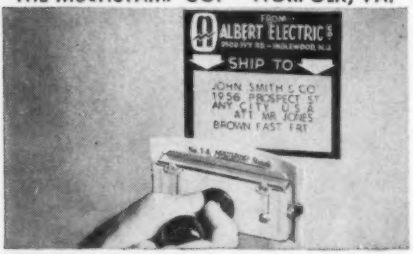
or write: Flooring Div. Dept. E for details
THE HYGIENIC DENTAL MFG. CO.
Akron 10, Ohio, U.S.A.

For More Information Circle No. 405

MULTISTAMP
STENCIL DUPLICATOR®

THE MULTISTAMP CO. NORFOLK, VA.



PRINT DIRECT! The MULTISTAMP Hand Stamp Stencil Duplicator prints shipping data direct on cartons, boxes, packages. Of rustproof metal to last indefinitely. Get 1,000 or more clear, sharp impressions from one stencil without re-inking. In photo above, shipper's name, address and "Ship To" label were preprinted by carton manufacturer.

Model 1A above, complete outfit with supplies in sturdy case, $12.50 f.o.b. factory. 7 other outfits $9.50 to $99.50. At office and shipping room supply dealers, or write for FREE catalog.

ALSO IDEAL FOR

SHIPPING TAGS **MENUS**
LABELS **OFFICE FORMS**
POST CARDS **BULLETINS**

THE ORIGINAL HAND STAMP STENCIL DUPLICATOR

OVER 35 YEARS

For More Information Circle No. 347

COTTERMAN TUBULAR WELDED STEEL SAFETY LADDERS
For Filing Rooms, Stock Rooms, Vaults, Strong—Easy to Move, Easy to Climb.

Mounted on Swivel Brake Casters which allow the ladder to be rolled freely when no one is on it. When you step on the ladder the rubber cushioned legs rest on the floor and prevent rolling. Made in 13 heights — 4 widths. Send for Circular 56-O and prices.

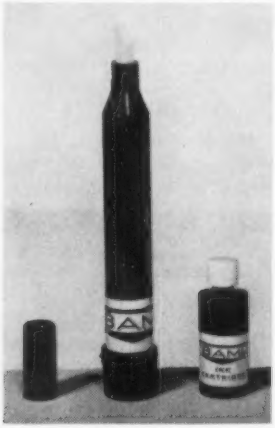
I. D. COTTERMAN, Mfr.
123 W. Spring Avenue
Naperville, Ill.

For More Information Circle No. 346

Because these flexible aluminum nameplates can be applied more quickly, users can realize savings in production time and eliminate delays on the assembly line. North Shore nameplates use a sealing material which may be either solvent-activated or heat-activated. The adhesive bonds permanently to curved, painted or crinkle-finished surfaces. The nameplates are furnished in a wide variety of designs and colors, permanently anodized and etched into the metal surface, so they cannot rub or peel off. No rivets, screws or escutcheon pins are required, and there are no holes to drill. Therma-Mark nameplates are now used for nameplates, scales, dials, instruction plates and trade mark insignias. For free samples and information about automatic dispensers for use on the production line, **Circle No. 103.**

MARKING PENS

Bankers & Merchants, Inc., 3229 N. Sheffield Ave., Chicago 13, Ill., announces a line of Bami Markers selling at 69c each and featuring ball-valve action and felt tip for permanent colorful marking, especially



"hard-to-mark" surfaces. Sold dry with ink supply in a cartridge to prevent drying out prior to use, and not affected by temperature or climate changes. In a leakproof, unbreakable plastic barrel of large ink capacity, the Bami Marker writes freely, marks permanently and draws

MP-Jr. streamlined

COIN CHANGER

USED BY 1/3 OF NATION'S BANKS

Makes change faster, more easily. Enhances beauty of bank. Sturdy aluminum with handsome hammertone finish.* Removable tray with inside storage box. Capacity $125 — pennies through half-dollars. Size 8" x 10" x 6½". Weighs 9 lbs. Rubber feet protect counters. Trouble free. Guaranteed.

***NOW!**
in choice of
4 decorator colors:
Tan, blue, green, and silver-grey.

ONLY $69 PLUS TAX

Write for descriptive catalogue and nearest dealer

Modern Products...Moderate Prices

METAL PRODUCTS ENGINEERING, INC.
Dept. 0, 4000 Long Beach Ave., Los Angeles 58, Calif.

For More Information Circle No. 397

SORTING SIMPLIFIED with the *Kohlhaas* VERT-A-SORT

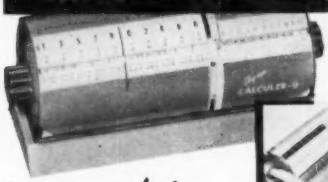
- *Fast*
- *Accurate*
- *Easy-to-Use*
- *Inexpensive*

Increase sorting efficiency and production with the easy action VERT-A-SORT. Speeds sorting of accounts receivable and payable, checks, invoices, etc. In a variety of sizes, indexed to your needs. Write for complete details.

THE *Kohlhaas* COMPANY
8012 S. CHICAGO AVE. • CHICAGO 17, ILL.

For More Information Circle No. 398

"SPLIT-SECOND" PAYROLL TAX COMPUTER



PAYS FOR ITSELF IN 30 DAYS

THE *Ayres* CALCULER-D

A twist of the fingers, and complete F.I.C.A. and Withholding Tax deductions appear on a single line, right before your eyes. Cuts figuring time in half. Used by concerns employing from 2 to 20,000. $15.70 postpaid.

Interchangeable drums permit changeing charts for tax revisions. Used for any payroll schedule. Government approved calculations.

SOLD ON 30 DAY TRIAL GUARANTEE

See your local stationer or write to:

AYRES CORP • Box 1081 WILMINGTON, CALIF.

For More Information Circle No. 399

STEVENSON & SMITH, INC.

LEADING MANUFACTURERS OF

Intricate, Accurate, Economical

SPECIALTY

Multi-Part Business Forms

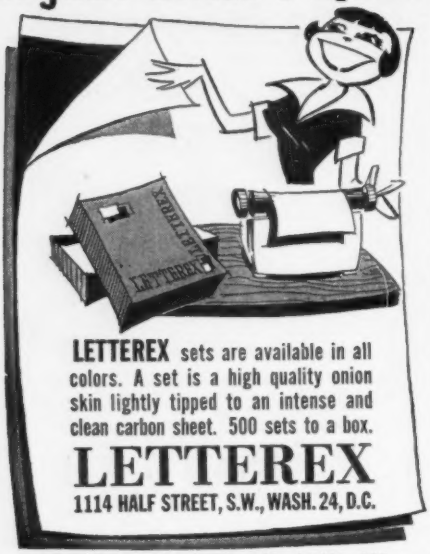
Stevenson & Smith, leading business forms manufacturers and business systems creators, are represented, coast to coast, by outstanding Business Forms dealers and systems analysts.

Write for name of your nearest representative.

STEVENSON & SMITH, INC.
Lackawanna Place
BLOOMFIELD, NEW JERSEY

For More Information Circle No. 375

It just SNAPS apart



LETTEREX sets are available in all colors. A set is a high quality onion skin lightly tipped to an intense and clean carbon sheet. 500 sets to a box.

LETTEREX

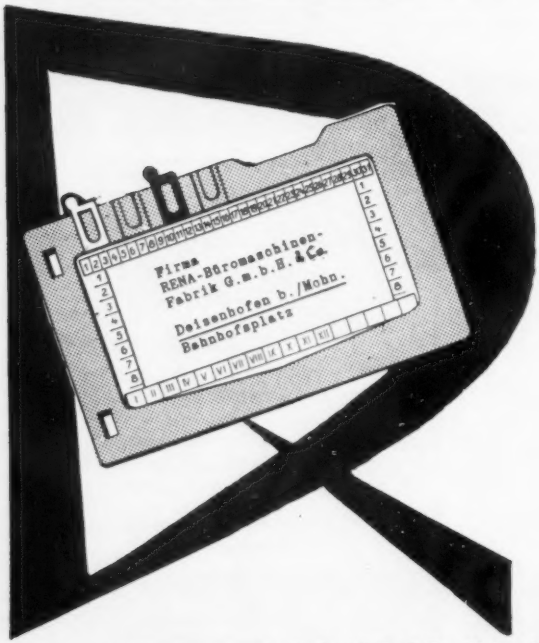
1114 HALF STREET, S.W., WASH. 24, D.C.

For More Information Circle No. 385

easily on smooth or rough surfaces. It has a color coded cap and molded nib protector. Easily refilled from a translucent, unbreakable cartridge, also color coded. Ten colors are instant drying, waterproof, odorless and non-toxic and include black, red, green, blue, purple, brown, yellow, pink, orange and white. Individually packaged with cartridge on a colorful display card containing suggested applications. **For More Information Circle No. 101**

LARGE PLAN FILE

Ross-Martin Co., Box 800, Tulsa 1, Okla., makes the Flatfile for filing large "can't-fold" plans, tracings, maps and blueprints up to 33″ x 42″. This four-shelf, sturdy all-steel file has a lock-equipped disappearing door to give unhampered access. Also available are jumbo Flatfile folders of jute board with cloth hinge and metal insertable tab attached to the front for indexing. The Flatfile will stack in multiples



In only seconds, you yourself can produce a RENA ADDRESS STENCIL, ready for printing. Therefore, an enormous saving in time and money. Clean and legible address impressions distinguish the world renowned RENA SPIRIT ADDRESSING SYSTEM.

rena

Büromaschinenfabrik G.m.b.H. & Co., Deisenhofen/Munich, Germany

Open for active U.S.A. Agents for Rena Addressing Machines and Stencils.

For More Information Circle No. 349

to conserve floor-space. Desk-high leg base places a single section at easy working height; low base is also available. Choice

of gray or green baked enamel finishes with brushed bronze trim. **For More Information Circle No. 129.**

INSTANT PLASTIC LAMINATION

Clear Plastic sheets bind to each other—sealing any flat object in between. No machines, heat or other treating required. Guaranteed to protect against moisture, tearing, soiling, etc. Lasts indefinitely . . . will not discolor, harden or crack.

AVAILABLE IN VARIOUS SIZES. WRITE FOR **FREE BROCHURE. Dept. A-11**

PLAIN-VU, CARR CORP.
3407 Prospect, Cleveland 15, Ohio

For More Information Circle No. 376

A REMINDER TO USERS OF LOWSTON DEE-R-TEE

TYPE CLEANER

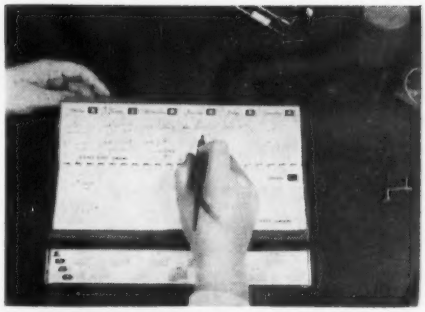
Replace latest after 2 years and continue to enjoy shiny clean type every day at low cost.

$1.10

$1.20 for Royal

LANSDALE PRODUCTS CORPORATION
BOX 568 LANSDALE, PA.

For More Information Circle No. 377



DON'T EVEN TRY TO REMEMBER!

Make a note on your desk pad . . . then take the desk pad with you!

THE DOOLITTLE

CAL-A-NOTER

. . . your handy reminder of

- **APPOINTMENTS**
- **EXPENSES**
- **TRANSACTIONS**
- **DISCUSSIONS**
- **ADDRESSES and PHONE NUMBERS**

Now you don't have to be without your handy desk pad reminder and its invaluable memoranda—the Doolittle CAL-A-NOTER goes with you wherever you go.

You can carry it in your attache or brief case, or in your pocket. With you at all times, you can have a complete day-by-day noting of important information—reminders of business conversations, important appointments, a permanent record of out-of-pocket deductible expense. The CAL-A-NOTER also provides space for the listing of your 100 most important contacts, with their addresses and phone numbers.

Attractively bound in colorful vinyl plastic, made to last a lifetime. Refills available, of course. If your stationer doesn't yet have his stock of Doolittle CAL-A-NOTERS, use the coupon below to order yours. On prepaid orders we'll pay the postage. Satisfaction guaranteed. And yes, discounts will be allowed on quantity orders (Send CAL-A-NOTERS as business gifts.) A tremendous value at only $2.95.

USE THIS COUPON TO ORDER YOUR DOOLITTLE CAL-A-NOTER

Doolittle & Co., Inc.
320 N. Dearborn St., Chicago 10

Please send me.... Doolittle Cal-A-Noters @ $2.95
Binding color preferred ..... Check enclosed ☐
Send C.O.D. ☐

Name .....

Address .....

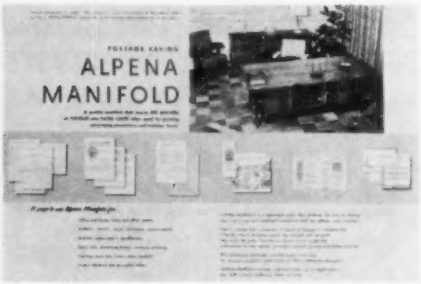
City ..... State .....

For More Information Circle No. 378

Literature from the Manufacturers

Manifold Paper

Fletcher Paper Co., 20 N. Wacker Drive, Chicago 6, Ill., shows how to save money

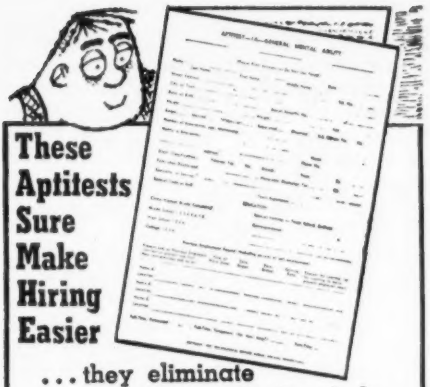


in paper cost and postage, in a folder on Alpena Manifold, a 9-lb. sheet with a smooth surface for letterpress or offset printing. The folder is printed by offset as a demonstration of the paper's line, type and fine screen halftone printability, with non-curl press performance and machine folding qualities. Illustrations suggest a wide variety of uses and show the practicability of Alpena Manifold in view of advanced postal rates. The manufacturer recommends it for forms, price lists, news and sales letters, instruction and memo sheets, sales and price books, direct mail envelope enclosures and other business and advertising uses. For the folder, **Circle No. 169.**

Tabulating Punch

Royal McBee Corp., Port Chester, N. Y., offers a brochure explaining the functions of the Keysort Tabulating Punch account-

For More Information Circle No. 360



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THE "KOH-I-BALL"

. . . the New Double-Ended Ball-Point Pencil

- **writes RED**
- **writes BLUE**

another Koh-I-Noor exclusive . . . the only two-in-one ball point pencil of its kind on the market

- ***polished brass nose-pieces***
- ***light wooden barrel***
- ***full-length red & blue ball-point inserts (easily replaced with available refills)***

Packed either 12 Koh-I-Balls on a display card or in a dozen box.

Retail price 49c

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Koh-I-Noor Pencil Co.

Bloomsbury, New Jersey

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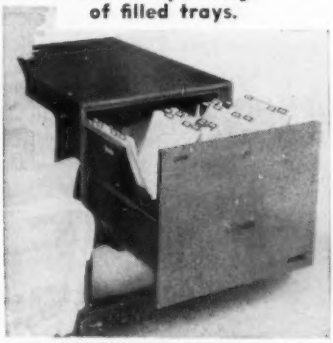
No heavy lifting of filled trays.



FIRE PROTECTION at point of use.

Over-all height 28½", width 22¾", depth 31". Inside Drawer width 18½", height 13½", depth 27".

Write for complete information and prices

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Indianapolis 4, Indiana

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VISIBLE RECORDS
give you

ACCURACY: Up-to-the-minute summaries . . . more efficient record controls.

SPEED: Current data located at a glance . . . faster posting . . . misfiling dangers eliminated.

ECONOMY: Inexpensive to install . . . pays for itself in clerical time savings alone!

VOLUME: A visible binder will hold up to 1500 records . . . 40 visible at one time!

CESCO *offers the most complete variety of visible record binders . . . stock forms and accessories . . . for nearly every type of business and record keeping procedure.*

FREE! — 28 PAGE IDEA BOOK ON VISIBLE RECORD KEEPING

Write for Cesco Catalog "G"

THE C. E. SHEPPARD CO.

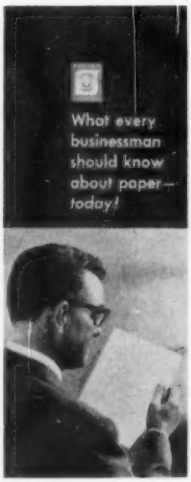
Established 1900

44-03 21st St., Long Island City 1, N. Y.

For More Information Circle No. 312

ing machine which is actuated by a simple ten-key keyboard and inner punches two quantities in Keysort cards, such as dollars and units. At the same time it accumulates and prints a detail tape. Later (usually after marginal sorts of Keysort cards have been made) the Tabulating Punch will read the inner punches, automatically adding, non-adding or subtracting as desired. At the same time it again prints results on the tape. The machine can produce duplicate punched cards while automatically printing and accumulating from the original Keysort cards. It will also automatically punch net accumulations in summary cards. Other advantages are that operation is as simple as a ten-key adding machine; machine-accurate tabulations, plus visible audit of entries assure complete proof; enlarged accounting controls become practical. For the brochure, **Circle No. 171.**

Cotton Fiber Papers



Cotton Fiber Paper Manufacturers, 122 East 42nd St., New York 17, N. Y., offers a booklet explaining that better papers are made with cotton fiber content. Called "What Every Businessman Should Know About Paper — Today!", the booklet briefly outlines the history of paper and its manufacture, and calls attention to the qualities of cotton fiber content papers that distinguish them from other papers: textures, strength, toughness, permanence, beauty and clarity. The advantages of cotton fiber papers in business and industry are discussed, including their use for multi-purpose onionskin, ledger papers and forms, index papers, drawing, tracing and blueprint papers. Promoting the theme: "The Greater the Cotton Fiber content . . . the

'TOP-DRAWER' FOR EVERY USE

1 pound

4 ounces

HIGHEST QUALITY PURE RUBBER BANDS—CONFORM TO FEDERAL SPECIFICATIONS. In 1-oz., ¼ lb. and 1 lb. boxes and bulk. ¼ lb. box has handy dispenser flap.

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get stability, get style, get VERTI-FILE®

patented

HERE'S WHY VERTI-FILE IS TODAY'S BEST BUY: Verti-File is better built; it's built by DeLuxe, one of the world's leading manufacturers of boltless shelving. All Verti-File shelves are tie shelves for maximum stability . . . free standing. Shelves are adjustable without tools on 1" vertical centers . . . each shelf has 5 dividers.

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NOW LEGAL-SIZE, TOO
11 Verti-File models
LETTER-SIZE
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Put Your Business Operations at Your Fingertips

Guaranteed permanent magnetic indicators that can be quickly placed and stay put make the Maggie Magnetic control system completely flexible with limitless signaling and charting possibilities. You tailor it to your individual records. Moreover, it cuts errors, clerical costs and raises efficiency. Low in cost, too . . . packaged kits begin at $49.50.

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COPY-RIGHT Copyholder

for over 30 years the "most wanted" copyholder ...now manufactured by Curtis-Young Corporation.

EXCLUSIVE FEATURES

- 2-Lever Action . . . feather touch spacer moves copy up line or more at a time... velvet brake lowers copy.
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Copy plate tilts instantly to any angle for perfect readability.

Copy-right is available in 6 sizes to take widths up to 36 inches.

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CONFIDENTIAL MAP FILE

Easiest way to file and find maps, blueprints, tracings. Quality metal cabinet file with locking doors. 112 tilting tubes handle 60" prints. Tubes indexed for quick location. Shipped from stock.

Patent No. 1610368. Other Patents Pending.

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For More Information Circle No. 287

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BERLIN W 35 · LUTZOW-STR. 3

WRITE FOR FREE COPY OF OUR ILLUSTRATED CATALOG

For More Information Circle No. 289

Better the Paper", the booklet closes with the example of paper durability and excellence "right in your own pocket. United States Currency is engraved on paper containing cotton and linen fiber." For the booklet, **Circle No. 170.**

Catalog Binder

Royal McBee Corp., Port Chester, N. Y., has issued a brochure on its Swing Hinge Binder. The piece includes a step-by-step illustration of how material is added or deleted, without disturbance or removal of the balance of contents. This binder is recommended for housing problems where material is constantly changing, such as sales manuals, price books and catalogs. Material housed in Swing Hinge Binders is kept up to date because changes are easily made. Other features which the brochure lists: flat back, permitting labeling of contents; sturdy but light construction, contents stay flat for reference regardless of where binder is opened; positive locking mechanism holds contents securely even if binder is accidentally dropped. Any size Swing Hinge Binder is available up to 14" by 14". Capacities are 1½", 2" and 3" for 3-hole, 4-hole or combination punched sheets. Variety of coverings and personalized titles available. For the brochure, **Circle No. 172.**

Slide Film on Offset Plates

Sales Dept., Lithoplate, Inc., 278 N. Arden Drive, El Monte, Calif., offers a color sound-slide-film on presensitized photo offset plates, entitled "Breaking the Profit Barrier." This 20-minute slide film, narrated by TV reporter Art Baker, tells the story of the impact presensitized plates have had on the graphic arts. Specifically covered are such things as the difference between negative and positive-working diazos, schematics showing the manufacturing principles from raw aluminum to finished plate, and recommended processing techniques. Script, photography and art are keyed to the numerous user advantages of presensitized plates. The film is available for free showings by all organizations interested in the subject.

Lithofold's *pre-punched and pre-numbered* piggy-back Electronic Checks are quickly typed as part of your original form. They'll slash your costs by automatic reconcilement on tabulating equipment in a *fraction of manual-reconcilement time!* Works with any tab cards of your choice riding piggy-back on Lithofold Continuous Forms. Prepare on your present tabulators, typewriters or teletypewriters.

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The world's smallest and most economical adding machine... SWIFT

Only $99.50 plus tax

SWIFT BUSINESS MACHINES CORP.
GREAT BARRINGTON, MASSACHUSETTS

For More Information Circle No. 303

News of the Office

Systems Success in Buffalo

The crippling hotel employees' strike in Pittsburgh forced the last minute transfer of the International Systems Meeting (THE OFFICE, Oct. pp. 82-85), from that city to Buffalo, Statler-Hilton Hotel, Oct. 13-15. Considering its magnitude, the transition went off smoothly and efficiently. Registration held at a high level, approximately 1000. There was a minimum of exhibitor inconvenience and by the second day most were functioning very well. Featured speakers from Germany, England, Holland and Japan gave currency to the international aspect of the meeting. In 1959, the conference and exhibit will be held in Canada for the first time, Oct. 12-14, Royal York Hotel, Toronto. Further information is available from Dar Tisdale, executive secretary, Systems & Procedures Assn., 4463 Penobscott Bldg., Detroit 26.

Advice on Computer Planning

The typical electronic data processing installation in the next few years will cost from $100,000 to $160,000 for preparing the site, will require from 5,500 to 10,500 sq. ft. of floor area, and will shy away from "fanciness" to impress visitors and the general public. These are the conclusions of a 170-page report published by Canning, Sisson & Associates, "Cutting the Cost of Your EDP Installation." The physical installation of the computer and preparation of personnel areas call for one of the largest outlays of cash, over the shortest period of time, of any element in a firm's whole program. But a firm can directly benefit from the experience of others, to reduce these costs significantly. Specific recommendations are made on site selection, layout, air conditioning, dust filtering, flooring, fire detection and prevention, protection of magnetic tape, etc. Further information can be obtained from Canning, Sisson & Associates, 1140 S. Robertson Blvd., Los Angeles 35.

Annual Reproduction Meeting

The Society of Reproduction Engineers will hold its annual Visual Communications Congress at the Hotel Sherman, Chicago, Dec. 13-16. About 75 manufacturers will exhibit in about 50% more space than a year ago. Speakers at the business sessions will include Dr. John R. Dunning, Dean of Engineering, Columbia University; George F. Fern, Director of Educational Activities, National Assn. of Manufacturers; and Edward A. Logelin, vice president, United States Steel Corp. There will be panel discussions of reproduction problems, led by qualified specialists. Full information may be had from Carl G. Sedan, 1150 Griswold St., Detroit 26.

Machines Replace Handwriting

Handwriting has fallen to a low estate because it no longer is the mark of an educated person, according to the Handwriting Foundation. Handwriting samples from 135,000 elementary school students from every state were analyzed by Frank N. Freeman, former Dean of the University of California School of Education. College student and adult handwriting was not as good as the average youngster's. The quality of elementary school handwriting is as high today as in previous years, however.

Many educated people believe they need only a dictating machine, telephone, or

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A Bold Forward Step

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PLATE SIZE

Rapid Printer

..A REAL PRODUCTION DYNAMO

Here's a "flip-top" plate-maker . . . the most modern, efficient and economical piece of equipment ever developed for the Graphic Arts Industry.

This completely self-contained unit makes *any* size plates up to and including 30" x 40". Vacuum frame is loaded in conventional face-up manner. The glass lifts, allowing plate and negative to be positioned . . . entire vacuum frame then reverses to a face-down position for *uniform* exposure over entire 30" x 40" area.

This production dynamo has nuArc's specially designed reflector and powerful 75 Amp automatic arc lamp, producing a point source light, thus eliminating undercutting—assures short exposures and perfect plates every time. Fast positive no-error vacuum seal is accomplished by nuArc's exclusive one-piece molded "live rubber" blanket which literally hugs flat and plate.

Takes up no more space than an ordinary office desk (40" x 50" floor area, 36" high). See your dealer or write for Bulletin 500 TODAY.

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For More Information Circle No. 426

SMALLEST INVESTMENT—BIGGEST RETURNS for electric typewriter users! A small percentage of your substantial investment in electric typewriters using carbon paper ribbons shows you the biggest return. The ribbon. Old Town's Carbon Paper Ribbon. *Millions already sold!*

Your typists will delight in Old Town's fuchsia plastic leader (17 inches long!) that keeps their hands from soiling when the ribbon is being put on the machine. They will be proud —as you will—of the exceptionally sharp, beautiful, non-smudge typing. All who read your letters will be impressed by their prestige, quality appearance.

THESE FEATURES ASSURE EXQUISITE WORK AND EXCEPTIONAL WEAR:

● Old Town's superb carbon coating, electronically controlled for uniformity as it is deposited upon thin, high-tensile-strength ribbon paper. ● Ribbon edges precision-cut, ribbons precision-wound, to eliminate tearing. These factors are "musts" for electric typewriter ribbons, 4 inches in diameter. *Every inch of an Old Town Carbon Paper Ribbon passes freely and evenly through the machine.*

Test and prove to yourself that Old Town Carbon Paper Ribbons perform best, save you more, on your electric typewriters.

SAMPLE RIBBON ABSOLUTELY FREE!
Write us for it on your business letterhead. NOW.

OLD TOWN CORPORATION

Established 1917. 750 Pacific Street, Brooklyn 38, N. Y.
World's Foremost Makers Of Carbons, Ribbons, Duplicators and Duplicator Supplies.

Old Town

For More Information Circle No. 423

typewriter, and fall back on handwriting only for a few scribbles, according to Dr. Freeman. "This is like thinking that since the advent of the automobile, we no longer need our legs." The foundation's annual award was presented to Bro. Bernard Peter, community supervisor of the Brothers of the Christian Schools and for 35 years a teacher, principal and supervisor in the New York area, who described the penmanship program in the Christian Brothers elementary and high schools.

Traveling Reproduction Show

Copyrama, a traveling show demonstrating high speed document reproduction through xerography and unitized microfilm, opened last month in Chicago and will visit Philadelphia, Nov. 11-13; Washington, D. C., Nov. 25-28; St. Louis, Dec. 17-19; Dallas, Jan. 7-8; San Francisco, Jan. 27-29; Los Angeles, Feb. 4-6; Cleveland, Feb. 18-19; Detroit, March 3-5; Montreal, March 18-20. Although equipment of other manufacturers that ties into the system is being shown, Haloid Xerox, Inc., is underwriting the full cost of the tour.

Dean of CPS Institute

The National Secretaries Assn. announced that Prof. George A. Wagoner of the University of Tennessee was elected Dean of the Institute for Certifying Secretaries. New members appointed to the institute included Dr. Earl G. Nicks, head of the business education division of Underwood Corp. and W. Harmon Wilson, vice president, South-Western Publishing Co.

Esso Suggestion Awards

Anne Zusi now shares the record for the largest suggestion-system award ever won by a woman employee of Esso Standard Oil Co. She works at Esso's Bayway refinery in Linden, N. J., and she suggested a simpler method for recording freight bills, shipping notices and other entries related to freight charges. Her award was $500. Last May, $7,700 went to Robert E. Nelson Jr. of the company's Baton Rouge refinery, the largest award ever received by a male employee.

Expect Upswing to Continue

Confirmation that the current employment upswing will continue at an increasing rate during the final quarter of 1958 was disclosed in a survey by Manpower, Inc., national temporary help service firm with branches in more than 100 major cities. The survey represents the employment opinions of some 2000 executives from 25 key industries in all sections of the country. As evidence that the upswing will be accelerated during the fourth quarter, Elmer L. Winter, Manpower president, pointed out that the percentage of respondents who anticipate employment increases is the highest to date in 1958. More than 24% expect to add to their employee forces during the period, compared to only 7% who anticipate decreases. Approximately 65% expect employment to remain at the present level, and 4% had no opinion. Among the industries reporting, the only ones in which a majority expect employment decreases to exceed increases were those affected by seasonal factors.

English Computer Symposium

There has been a rush for tickets for the six sessions of the Business Computer Symposium, to be held at Olympia, London, England, Dec. 1-3 along with the Electronic Computer Exhibition (Nov. 28-Dec. 4). C. W. Cushing, chairman of the symposium committee said: "Within five days we had disposed of 20% of the 4000 tickets." Tickets are 2½ gns. each.

NABAC School Director

Edward F. Lyle, senior vice president and controller, City National Bank & Trust Co., Kansas City, Mo., was named director of the NABAC School for Bank Auditors & Controllers according to the president of the school's board of trustees, Franklin D. Price, vice president, Texas National Bank, Houston.

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For More Information Circle No. 273

The Reports Problem

(Continued from page 160)

confusing in any discussion of reports.

Many times we overlook a report because it is not on a form. The quantity of the reports is relatively small, so it isn't worthwhile to print them. But, while the quantity is small, the cost of the preparation of a report is extremely high. Some reports cost hundreds of dollars each to prepare.

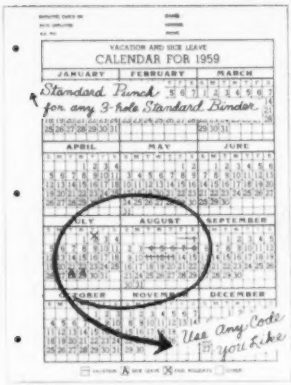
Let's summarize the reports situation as we find it in most organizations.

1. There are too many reports.
2. They cost a great deal of money.
3. They don't report against a plan.
4. They fail to help executives to make good decisions.

A systems friend of mine, who put in a reports control program, saved the company $75,000 a year. This was just *cash* savings: a secondary objective. His objectives were three: (1) to develop reports that were useful; (2) to reduce the confusion that existed in the reports; (3) to lower the cost of reporting functions. When his reports control program went into effect, every report was known, its use was known, and its cost was known. The people who were on the list were known.

We would like to caution anyone who is thinking of starting a reports control program to lay off the skyrocket stuff. I mean where everyone gets excited. We get up a head of steam. After we blow the whistle a couple of times, the steam is all gone and we are back where we started. We have made a round trip to nowhere. The skyrocket starts out with a hiss, then comes a big boom, an ahh, and

VACATION AND SICK LEAVE CONTROL SHEETS



These control sheets give an accurate, readily accessible, and economical record of employee's annual vacation, sick leave, paid holidays, and other records requiring tabulation by calendar days. Over 250,000 sold this year.

1959 Vacation and Sick Leave Calendar Sheets

25 sheets	$2.00	300 sheets	$12.00
50 sheets	$3.00	400 sheets	$14.00
100 sheets	$5.00	500 sheets	$15.00
200 sheets	$9.00		

Additional sheets over and above 500 .....1½c each

Minimum order 25 sheets—F.O.B. Columbia, Missouri

Postage Prepaid if check or money order accompanies order.

AMERICAN PRESS, 200A So. 7th, Columbia, Mo.

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The ALL NEW SPEEDRITE FOLDING COPYHOLDER

Welcomed by secretaries as a valuable aid to production and accuracy. Relieves eye and neck strain. Completely adjustable to desk and light conditions. Never in the way. Folds behind typewriter when not in use.

Other Hall-Welter products include: Error-No Copyholders, Speedrite Checkwriters, Chexsigno Check Signers.

HALL-WELTER COMPANY, INC.

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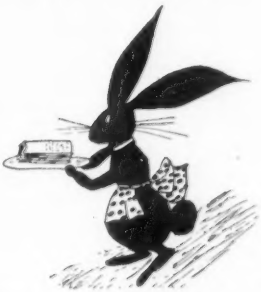

Use either or both sides for double-value, double-economy!

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Manufacturers of Offset Duplicating Supplies

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Smith's OPNWINDO® Metal Tabs

solve filing problems at LOW COST!

Adjustable OPNWINDO® metal tabs make it easy, economical to expand or revise your present filing system; start a new system; or convert to shelf filing. Available in 1 and 2 inch widths, the tabs are complete with clear or colored plastic label covers.

If not available from your dealer, write to

CHARLES C. SMITH, INC.
EXETER, NEBRASKA

For more than 60 years, a complete line of time-saving signals and indexes

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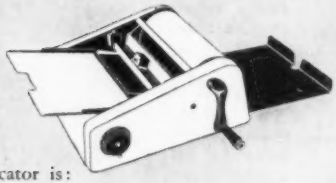
SADA SPRINT

is portable

it can be removed from one office to another
everywhere there is
a typewriter and the need of more copies.



The Sada Sprint spirit duplicator is:

- light
- completely close
- the spirit is hermetically contained in the suitable tank

Your secretary will use it with pleasure, without any difficulty
and without being smudged:
easy to operate adjustable for printing on any range of paper
ensures the even clearness on any part of the copy

FEATURES:

- automatic engagement of the master,
- immediate and micrometric printing displacement
- printing pressure with progressive regulation,
- semi-automatic moistening,
- reversible paper feed table for the complete closing of the machine.

Write for details and terms to

SADA S.p.A. Duplicatori ed Affini

First Manufacturer of Duplicators in Italy
Milano, Italy, - Piazza S. M. Beltrade, 1.

For More Information Circle No. 226

finally the inevitable fizzle.

Don't go off on a reports control kick and then, three months later, forget about it. You will be just wasting your money and the reports will get right back into the condition they were when you first made your study. If you decide to go into a reports control program, do it on a sustaining basis. *Put someone in charge.* He must continue to ride herd. No new reports can be issued without his approval. Each report is numbered. No one gets on the distribution list without checking first with him. He determines the need. He points out duplication, and discourages useless reports and useless distribution.

If you do decide to go off on a reports control program, the first job is the round-up. This way you will get a picture of what is now happening. We bet that you and your bosses will be appalled by that picture.

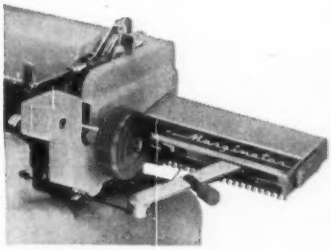
The reason for the high quantity and low quality of reports, so common in most organizations, is merely that reports are seldom incorporated into the systems plan. In most cases there is no systems plan. The organization may have procedures, manuals and forms, but no overall plan.

If a report never stirs up any action, it is useless. Reports should go only to a man who has the authority to redirect the action if he thinks redirection is called for. A report with the six characteristics shown on page 158 is a vital report. It reaches a man soon enough so that he can do something if the report indicates the need of action.

NOW! **TYPING that looks like PRINTING —**

at a fraction of the cost!

Inexpensive Typewriter Composition That Looks Like Expensive Typeset Printed Matter



Your "copy" CAN Look Like This

Now - your typewriter is more useful than ever. Anything that is now set up in type can be well reproduced with typewriter composition, and JUSTIFIED so that regular type-set printing is simulated. Regardless of the process of reproduction -- whether for a daily newspaper, an elaborate brochure, or a simple offset, mimeographed, or hektographed bulletin, the Marginator now offers you composition at greater savings than ever before possible. The two columns shown are IDENTICAL line for line. Compare them and see how perfectly the MARGINATOR evens up the right-hand margin.

Your "copy" Now Looks Like This

Now - your typewriter is more useful than ever. Anything that is now set up in type can be well reproduced with typewriter composition, and JUSTIFIED so that regular type-set printing is simulated. Regardless of the process of reproduction -- whether for a daily newspaper, an elaborate brochure, or a simple offset, mimeographed, or hektographed bulletin, the Marginator now offers you composition at greater savings than ever before possible. The two columns shown are IDENTICAL line for line. Compare them and see how perfectly the MARGINATOR evens up the right-hand margin.

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MARGINATOR COMPANY, 1121 W. Magnolia Ave., Burbank, Calif.

For More Information Circle No. 269

News of the Industry

Flofilm Sales Manager

Michael M. Harris

Raymond Koontz, president of Diebold, Inc., Canton, Ohio, announced the appointment of Michael M. Harris as sales manager of the company's Flofilm Div. Mr. Harris was for 11 years with Remington Rand as a sales manager for the company's business machines division. As sales manager of Diebold's Flofilm Div., he will make Suite 2165, 45 Rockefeller Plaza, New York 20, his headquarters. Immediately prior to his affiliation with Diebold, Mr. Harris was a management consultant in sales, distribution, sales training and merchandising with accounts in the general manufacturing field.

Heads Datamatic Sales

Gavin S. Younkin

Gavin S. Younkin, vice president and general sales manager of Minneapolis-Honeywell Regulator Co., took over active direction of the sales activities of the company's Datamatic Div. located in Boston, which produces the high speed Datamatic 1000 data processing system. Paul B. Wishart, Honeywell president, said the transfer of direct responsibility for Datamatic sales to a corporate officer represents "another important step in Honeywell's long-range plans for this phase of our business." The Datamatic Div. is headed by Walter W. Finke as president. Previously sales were under the direction of John Johnson who has left the division to take another position.

Almost 14,000 at NSOEA

Almost 14,000 attended this year's convention and exhibit of the National Stationery & Office Equipment Assn. in Chicago. Exhibits were almost a third larger in number than ever before and attendance at the exhibits indicated that, to most dealers, this is the most attractive part of the convention. John B. Brain Jr., Brain's Stationery Co., Omaha, was elected NSOEA president. Vice presidents are—Distributors Div.: W. Neill Stewart Jr., Stewart Office Supply Co., Dallas; Manufacturers Div.: L. G. Morris, Eaton Paper Co., Pittsfield, Mass.; Field Div.: Earl Collins, Rockwell-Barnes Co., Minneapolis. John C. Runnels, Commercial Furniture Co., Washington, D. C., is treasurer.

Acquires Hamann Calculators

Smith-Corona Marchant, Inc. has acquired the Hamann Div. of the German Telephone Works & Cable Industry, Inc., it was announced by Edward H. Litchfield, chairman, Smith-Corona Marchant. A new company, Hamann Rechenmaschinen G.m.b.H., had been formed and will be operated as a subsidiary of Marchant Rechenmaschinen G.m.b.H., Ham-

Smead's Files are rugged and built to carry the load

Ask your Stationer to show you this beautiful, soil-resistant, long wearing file made of Smead's Leather-Like Material. Available in many sizes, with or without flap.

Discuss your filing problems with your Smead dealer. He represents the most complete line of EXPANDING PRODUCTS and FILING SUPPLIES made by any one manufacturer.

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For More Information Circle No. 453

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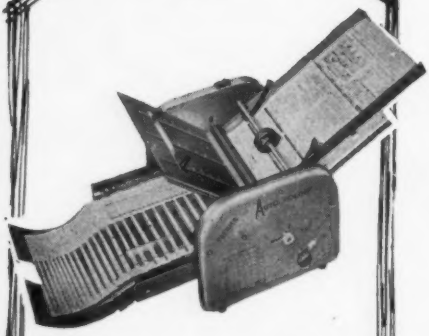
New PREMIER AUTO FOLDER



AUTO FOLDER

Makes seven most popular folds in letters, invoices, circulars, and many others.

INCLUDES

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- Easy Adjustment
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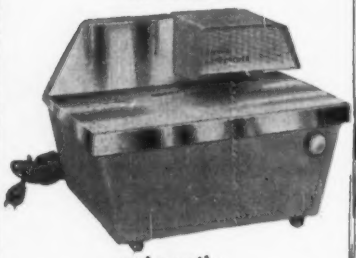
Budget priced at only **$149.95** plus F.E.T.

New PREMIER AUTO-OPENER

OPEN 600 ENVELOPES PER MINUTE



automatic

ENVELOPE OPENER

An unusual, new automatic envelope opener with high-cost features at budget price.

Includes Stacking Tray

- Completely Automatic
- Fast & Economical
- Space Miser
- Complete Safety
- All Electric
- Attractive Finish
- Fully Guaranteed

At the unmatched low price of **$99.95** plus F.E.T.

MARTIN YALE, INC.

2100 W. Fulton St., Chicago 12, Illinois

For More Information Circle No. 386

burg, Germany, a totally owned subsidiary of Smith-Corona Marchant, Inc. Hamann manufactures calculators and is specifically known for its ten-key electric rotary calculator. It also makes several hand operated calculators.

Hunt Pen Plant Dedicated

Gov. Luther H. Hodges of North Carolina formally dedicated the new manufacturing plant of the C. Howard Hunt Pen Co. at Statesville on Sept. 19. He told George E. Bartol III., president of Hunt Pen, and assembled guests and employees, that more progressive companies are finding North Carolina the ideal location for new plants because of the state's modern corporate tax structure and favorable labor supply. Mr. Bartol said the new plant is operating at such a favorable efficiency rate that the company has been able to develop additional product improvements and sales advantages for its customers.

NBFA Convention

The 13th Annual Convention of National Business Forms Associates which closed Oct. 1 at Hot Springs National Park, Ark., presented a well rounded program. Among future projects being developed by this fast-growing organization is a nationwide advertising program and the development of the NBFA Manual and Reference Guide. The manual, which will include all phases of the business forms industry and the machines on which forms are written and used, is expected to comprise some 500 pages. It will be supplied to members and manufacturers in loose leaf binder form with updating sections. New officers of NBFA are: president, Ross Thompson, Consolidated Business Forms Co., Pittsburgh; vice president, Charles C. Tingle, Tingle Business Forms Co., Indianapolis; secretary-treasurer, F. J. Ring, Fort Lauderdale, Fla.

Sales Manager of Cline Co.

Diebold, Inc., announced the appointment of J. Bremner Proctor as vice president and sales manager of its subsidiary company, K. F. Cline Co., manufacturer of shelving, lockers and storage cabinets. Mr. Proctor had been general manager of Penco Metal Products.

Addo-x Sales Manager

Monroe Oppenheimer

The appointment of Monroe Oppenheimer as sales manager of Addo-x, Inc., New York, has been announced by N. Gosta Arnheim, president. Mr. Oppenheimer has long been associated with Addo-x in the field of dealer relations. Besides handling sales activities for the Addo-x Swedish adding machine, Mr. Oppenheimer will also have under his jurisdiction the Adler West German typewriter and the Roneo English duplicator, all of which are sold in this country by Addo-x, Inc.

New Copease Branches

Branch sales offices in San Francisco, St. Louis, and Milwaukee have been

Horace B. Van Dorn (center), 75-year-old vice president of Joseph Dixon Crucible Co., received a volume of congratulatory messages from business leaders throughout the U.S. on his 50th anniversary with the company. With him are Frank G. Atkinson (left) Dixon president, and Edward M. Cabaniss, board chairman.

WANTED:

EXPORT AND SALES ASSISTANT TO THE PRESIDENT

of a well established and profitable office machine business. A knowledge of languages helpful. Good future for alert man with initiative.

Write, including résumé, to:

KEY PERSONNEL COUNCIL, *Agency*
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TYPEWRITER ROLLER CHANGE

Insist on a "Futuristic" 5-Star Platen for Best Results

Manufactured and Distributed to Office Machine Dealers by
AMES SUPPLY COMPANY
Contact your Local Typewriter Dealer

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TYPEX The Miracle type-cleaner

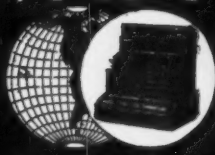
No liquids, no gum to "re-knead." An interchangeable wheel filled with an adhesive substance lifts the dirt from the typewriter's type. Just rolled over the type-faces, works fast, keeps type sparkling clean, leaves typist's hands immaculate. Write for free folder at once.

MICHAEL FRUMKIN
87-11 35 Ave., Jackson Heights, N. Y.

For More Information Circle No. 368

CASH REGISTER PARTS

WORLD WIDE SERVICE



HIGHEST QUALITY PRODUCTS

CASHERE CORPORATION
Successor to International Cash Register & Parts Co.
207 E. Evergreen Ave., Mt. Prospect, Ill.

For More Information Circle No. 369

opened by Copease Corp., national distributors of Copease photocopy machines and supplies. "The new sales offices were established to fill the increasing demand in these cities," according to Charles E. Hallenborg, president.

President of Rogersnap

Will Rogers

Will Rogers has been elected president and chairman of the board of Rogersnap Business Forms Co. Mr. Rogers, a pioneer in the business forms printing industry, is founder of the company. Through his direction, Rogersnap products are sold to customers from Alaska to Puerto Rico. Rogersnap manufactures continuous, stock and standard forms and carbon second sheets in a flip-out dispenser box.

Control Systems, Inc., launched its sales campaign for the new Plus-O-Matic adding calculator and the Plus Diehl line of rotary calculators at a national sales conference in New York. L. to r.: Otto C. Corback, Control Systems technical manager; W. W. Sublett, president, Plus Business Machines, Ltd., Canada; Don Klein, metropolitan sales manager; Margaret Dupignac, general office manager; Egbert Angrick, managing director, Diehl Calculating Machine Co., Germany; Henry R. Mathieu, president, Control Systems, Inc.; Robert Pratt, west coast general manager; Don Bassett, New England general manager, and Ed. Collum, southern states general manager.

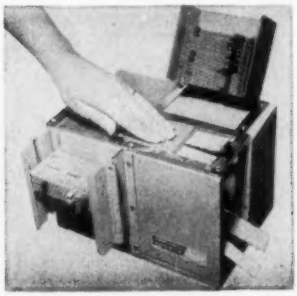
Lindicator in the U. S.

Allen O'Hara, 713 M & M Bldg., Houston 2, Texas, is the national distributor for Lindicator copyholders, manufactured in England. Mr. O'Hara is a long established office machine specialist. The Lindicator is a fully automatic, line-by-line copyholder with magnifier and copy light, and keyboard or foot control for the operator. More than a quarter-million units have been sold in Europe.

Bachmann Represents Amberg

Walt Bachmann of W. M. Bachmann Associates, Clear Lake, Iowa, was appointed an Amfile representative in northern Wisconsin, upper Michigan, Nebraska, Kansas, Minnesota, Iowa and North and South Dakota. The announcement was made by Bertrand Amberg, president, Amberg File & Index Company, Kankakee, Ill. Mr. Bachmann had been district manager for Art Metal, Postindex Visible Equipment and Wabash Filing Supplies for the past six years.

Walter J. Binder, president, Western Paper Goods Co., Cincinnati, announced a comprehensive advertising and promotion campaign, featuring the advantages of Silver Seal Clasp Envelopes. The advertising, which includes space in major publications, presentation folders, literature, direct mail, point-of-purchase displays, and free sample kits, is designed to encourage distributor and dealer inquiries and create new sales.



The Quik-Stripper

TAKES PLATES AND CARDS OUT OF ADDRESSOGRAPH FRAMES!

Slide frame over opening in table-top of Quik-Stripper. Plates and cards fall out, slide down chute into waste basket. Impossible to get grime in hands or ruin fingernails. Work from **back** of frame. Fingers never touch inked plate. Pays for itself because of time saved. Models for **all** styles of frames. Trouble free. No service problems. Send for circular giving details and prices. Specify style of frame to be stripped or send sample. Write Addressing Machine Co. of Calif., 667 Mission St., San Francisco 5, YUkon 2-2130. Quick-Strippers sold on 5-day approval.

For More Information Circle No. 361

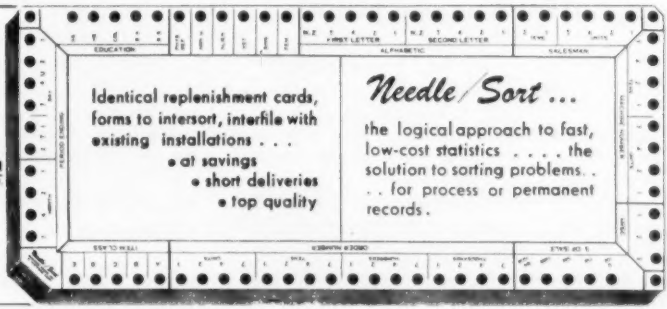
Needle/Sort

A PRODUCT OF

BUSINESS FORMS INC.
WEST HARTFORD, CONN

REPRESENTATIVES IN MOST MAJOR CITIES

May We Quote on Your Requirements?



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Multilith Owners!
Better Presswork
OR YOUR MONEY BACK!

Jumbo Shell is success-proven 10 yrs.! Thousands sold on approval, less than 1% returned. Many in use 8-10 years, still good! Improves presswork amazingly. "It's like 3 extra rollers!" say users. Installs in 5 minutes without drilling. Choice of brass or lucite cylinder, only $29.50; postpaid if check with order. 5-year guarantee. 10-day money-back guartee. Write!

FREE! Slash masking, set-up time! Try 5 Base Line Masking Sheets FREE! For Nos. 1250, 1300, 2066-SD, LD, also Davidsons. Mention make, model press!

$29.50 COMPLETE

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For More Information Circle No. 442

PAYCHECK "OUTLOOK" ENVELOPES

Eliminate Time and Expense of Addressing, also Chances of Error.

Paycheck "Outlook" Envelopes are absolutely opaque, essential when wages are paid by check. Nothing shows but the employee's name. This improves personnel relations.

Send for Samples and Prices Today

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Originators of "Outlook" Envelopes
1001 W. Washington Blvd., Chicago 7, Illinois

For More Information Circle No. 443

Listen Marge—Did I tell you how much easier our work is since we got these marvelous new note pads—They're called SMART ALEC—You know they're just the thing for phone notes you have to catch—Boss says they're so easy to write on with that low down writing surface, just turn a knob to look at your back notes. This new memo system increases our PERSONAL EFFICIENCY. Oh your getting one too? Lucky you—Goodbye Marge.

"smart alec"
NOTE PAD
No. 57 **$5.95** complete

Dealers write:
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5711 NORTHWEST HIGHWAY, CHICAGO 46, ILL.

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Two Leading German Office Equipment Journals, at reduced combination rate!

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These vital Trade Journals keep you up-to-date with the German—European Office Appliance market. In regard to subscriptions or advertising rates contact our American Representatives:

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For More Information Circle No. 445

Store-Bank Systems Executive

J. P. McKenna Jr.

James P. McKenna Jr. has joined Diebold, Inc., in a newly created managerial position it was announced by Raymond Koontz, president of Diebold. Mr. McKenna, who has been a leader in new cycle billing techniques, will specialize in the development of coordinated procedural systems specifically for department stores and banks. He will make his headquarters in New York. Mr. McKenna has had wide experience in retail and financial accounting procedures with the Central Hanover Bank of New York, Eastman Kodak Co., and as sales manager of Craig Files.

Bergens Tidende

SUMMIT CONFERENCE IN BERGEN

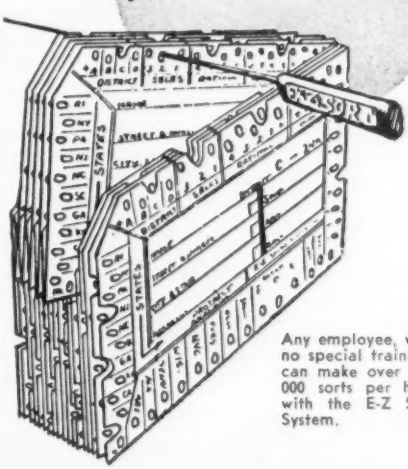
Delegates Attend From 23 Countries

TALKS ON FUTURE OF WORLD MARKETS

JØRGEN S. LIEN — THE MAN BEHIND IT ALL

Over 350 representatives from 23 countries attended this year's sales convention of Jorgen S. Lien in Bergen, Norway, manufacturers of Regna Adding Machines and Cash Registers.

E-Z SORT has the ANSWER to your PROBLEM



Any employee, with no special training, can make over 60,000 sorts per hour with the E-Z Sort System.

CONTROLS . . . SIMPLIFIES . . . EXPEDITES

No matter what records you now keep, you will widen your controls, simplify your systems and expedite whatever work your records control—by switching to the E-Z Sort System.

Let us demonstrate the advantages you can gain with E-Z Sort records, tailor-made for any of your office or plant procedures. Write today for facts.

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45 Second St., Dept. 3, San Francisco 5, Calif.

Sole MANUFACTURERS of E-Z SORT Systems.
Over 50 Offices to Serve You.
For More Information Circle No. 365

WJ Sells Calendar Division

Wilson Jones Co. announced that its Defiance Calendar Div. has been sold to Keith Clark, Inc., New York, so that the Wilson Jones sales department can devote more time and its factories more space to the company's line of one-time-carbon-interleaved Snap-A-Way forms, marginal punched continuous forms and its line of nylon post binders. The forms were introduced in 1956 and WJ engineers invented loose leaf binders with nylon posts the same year. More than 2000 stationery retailers are active GrayLine dealers, selling boxed Snap-A-Way sets ready to use or imprint, stock autographic register tickets and tabulating forms, and standard body forms especially treated for individual customers. GrayLine dealers also sell nylon post binders to the firms with automatic tabulating installations. WJ will not produce a 1960 line of desk calendars, but has arranged for its dealers to obtain them from Keith Clark.

Duplicard Distributors

Duplicard Addressing Machines Co., 1010 E. Chestnut St., Santa Ana, Calif., has appointed W. C. Dawkins, Inc., 1061 Ingraham St., Los Angeles 17, as distributor for the 11 western states, Alaska and Hawaii. As well, Mr. Dawkins is Duplicard distributor for Virginia, Maryland and District of Columbia, where he is represented by John Stewart, 904 D St. N.W., Washington, D. C.

R. S. Daugherty

R. S. Daugherty, president, Shelby Salesbook Co., Shelby, Ohio, died in New York on Sept. 14. Mr. Daugherty, who was a former president of the Business Forms Institute and was serving as a director of that organization, was widely known throughout the business forms industry. Services were conducted on Sept. 17 at Shelby.

For More Information Circle No. 363

IF OFFICE GIRLS HAD EIGHT ARMS

They'd Be As Fast and Versatile

AS THE NEW

Amfile SORT-ALL SORTER

ONLY **$4.50**

At YOUR FAVORITE STATIONERY STORE

Fast and versatile, the new Amfile® Sort-All lets you sort anything for Filing—Posting—Mailing—Distributing, etc. Sorts alphabetically from A-Z—by Month, Day or Date or any combination. Numerically by 5's or 100's and singles. Sturdy pressboard with plastic tabs—assures long life.

DON'T BE "OUT OF SORTS"—SORT YOUR PAPERS THIS EASY WAY!

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AMBERG FILE & INDEX COMPANY

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For More Information Circle No. 380

THE WORLD OF FIGURES AT YOUR FINGER TIPS

hamann 300

a four-operation calculator with

- simplified keyboard
- touch-operation
- double-back transfer
- automatic division

For further information folder No. 1404 E

hamann

RECHENMASCHINEN GMBH
BERLIN SW 61 (US-SECTOR)

For More Information Circle No. 381

SCHWAB COMBINATION FIRE AND BURGLAR PROTECTION

This combination unit consists of a Mercantile E Bank H Burglar Chest installed in the top of a steel case with an Underwriter's labeled Class C T-20 fireproof safe in the bottom of the case. This is the perfect unit for the business that must provide protection for both records and money. This unit can be built in a variety of sizes to fit any particular need.

SCHWAB SAFE COMPANY
LAFAYETTE, INDIANA

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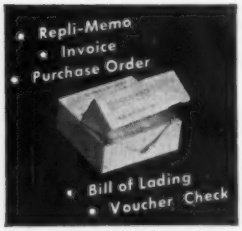

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Approved "Rogersnap Business Forms"—save time and money. Forms include Repli-Memo, Voucher Check, Purchase Order, etc.

Write for FREE sample. Dept. "O."

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ZIP-O-RITER

Addresses Directly from Card Files

Writes Headings On Work Sheets Accounting & Tabulating Forms

INDISPENSABLE FOR MANY OFFICE ADDRESSING & DUPLICATING PROBLEMS.

Anyone can use the ZIP-O-RITER which prevents copying errors. Addresses or duplicates without plates, inks or costly machines.

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RITE-LINE COPYHOLDER

- SAVES EYESTRAIN
- PROMOTES ACCURACY
- INCREASES PRODUCTION
- TAKES COPY UP TO 20"
- HOLDS NOTEBOOK
- FITS IN DESK DRAWER
- LINE MAGNIFIER EXTRA

Send for FREE Booklet describing RITE-LINE COPYHOLDER

RITE-LINE CORPORATION
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For More Information Circle No. 449

National Conference & Exhibit Calendar

National Assn. of Bank Auditors & Controllers, Statler-Hilton Hotel, Dallas, Nov. 3-5.

Industrial Management Society, Sherman Hotel, Chicago, Nov. 5-7.

Federal Government Accountants Assn., Shoreman Hotel, Washington, D. C., Nov. 17-18.

Eastern Joint Computer Conference, Bellevue-Stratford Hotel, Philadelphia, Dec. 3-5.

Society of Reproduction Engineers, Sherman Hotel, Chicago, Dec. 13-16.

Western Joint Computer Conference, Fairmont Hotel, San Francisco, March 3-5.

National Assn. of Educational Buyers, Fontainebleau Hotel, Miami Beach, May 11-13.

Insurance Accounting & Statistical Assn., Ambassador Hotel, Atlantic City, May 17-20.

National Society for Business Budgeting, Minneapolis, May 21-22.

National Office Management Assn., New Orleans, May 24-27.

National Assn. of Accountants, Waldorf-Astoria Hotel, New York, June 21-24.

National Office Machine Dealers Assn., Cincinnati, July 21-24.

National Society of Public Accountants, Sherman Hotel, Chicago, Aug. 24-28.

National Stationery & Office Equipment Assn., Conrad Hilton Hotel, Chicago, Sept. 26-30.

Systems & Procedures Assn., Royal York Hotel, Toronto, Canada, Oct. 12-14.

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Answer the Wraps Problem in Offices and Waiting Rooms

These efficient VALET Racks keep wraps off waiting room chairs, aired, dry and in press. Hold coats spaced apart, hats, umbrellas and overshoes. Accommodate 3 persons per running foot. Come in lengths of 3 ft. 3 in. or longer by the foot. The S-6 Office Valet costumer accommodates 6 people—ends piling of garments on others. Will not tip over. Built for life-time service of heavy gauge, welded furniture steel. Smart in modern baked enamel finishes. Units form a complete system of wardrobe equipment that provides efficient wrap accommodation wherever people gather.

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As We See It...

Much attention has been given lately to the book "Parkinson's Law" by a history professor of that name at the University of Malaya. The thesis is that work tends to fill up the allotted time of all the people doing it. In other words, three or four people will take as long, or longer, to do a set task as one person performing the same task.

This serio-comic theme has received enormous publicity (more than all the good professor's scholarly and earnest tomes on serious history combined) and in many corners has even been accepted rather factually, akin to Newton's law of gravity!

While there is no question the book is satirical and affords welcome comic relief to an overtense business world, as with many such works there is a core of truth. The "law" should be a challenge to office executives everywhere to make a proper review of their systems and paperwork programs to determine just how economically and efficiently they are designed and performed.

There has been insufficient study on the relation of work accomplished to numbers of employees engaged. What little has been done indicates there is something on the professor's side. Occasionally departments in business with large numbers of workers have recorded an increased output when a fair percentage of the department was on annual vacation. Other investigations reveal a much lower percentage of human potential realized in office work than should be. Also this utilization percentage often drops when more people are added to the job.

It is a provocative subject worthy of serious study.

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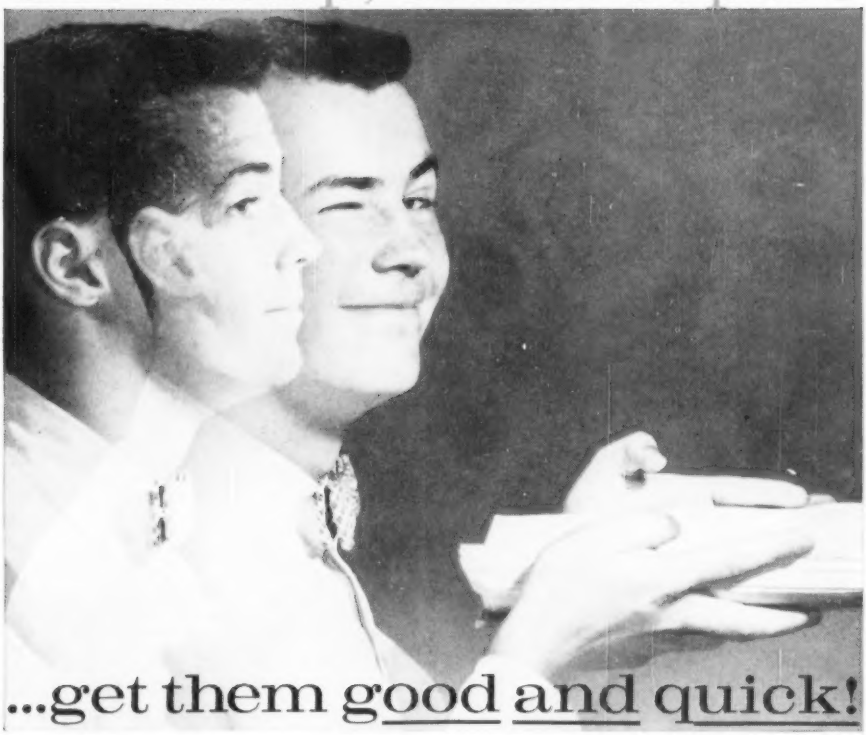

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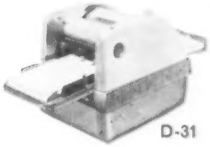

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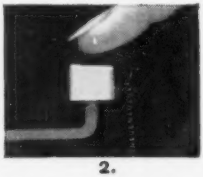
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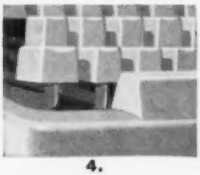
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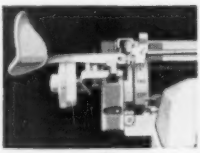
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